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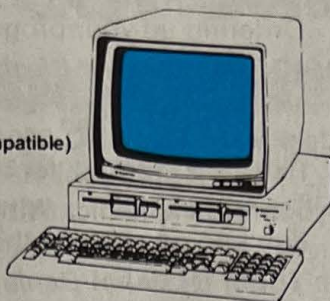
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For Soft Sector Advertising and Marketing office information, see Page 94.

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LETTERS TO THE EDITOR

PAR
AVION

TROUBLE IN SPADES

Editor:

The following one-line program will demonstrate that the playing card "spade" character, CHR\$(6), does not act properly when used as an argument to the SYMBOL command:

```
10 CLS:A$=CHR$(6):SYMBOL  
(200,50),A$,1,1:END
```

Used in a PRINT statement it works fine. When you try to SYMBOL it, however, the result is always wrong and hopelessly unpredictable.

Lew Moorhouse
Boston, MA

Editor's Note: After playing around with this, we have ascertained that this CHR\$(6) problem is a bug in BASIC Vers. 1.1 and 1.2. It has apparently been corrected in Ver. 1.25 and later.

All users should be aware that there are several different versions of Sanyo BASIC in use among 550/555 users. The latest release we have seen is Ver. 1.32, which is being supplied on the latest copies of Sanyo's MS-DOS 1.25 and 2.11 System Utilities Disks. These disks, as well as the Video RAM Board Utilities Disk (which contains GW-BASIC Ver. 2.02), are available for \$15 each from Sanyo Business Systems Corporation, Customer Support — Computer Division, 51 Joseph Street, Moonachie, NJ 07074. We have been informed that only certified checks and money orders will be accepted—anything else will be returned unprocessed.

In order to keep these minor bugs from plaguing us, we encourage everyone with an early version of Sanyo BASIC to update. See the related item on Page 87.

WRONG ADDRESS

Editor:

Here is some additional information about my CalcStar TERMCAP.SYS modification to use the cursor keys. The modification as presented in the February '85 issue of SOFT SECTOR may cause some confusion to those readers who will try to use DEBUG to make the changes. This is because I used a "zap" program instead, and therefore the addresses are different. When using DEBUG, they should then be 118, 119, 11A and 11B instead of 19, 1A, 1B and 1C.

Another idiosyncrasy of this modification is that you cannot use the uppercase letters M, K, P and H, since by typing them, all you will get is the ">" "<" to move. If you must use those particular letters, then this modification is not for you.

Ramon Rachman
Azusa, CA

CROSSED SIGNALS

Editor:

I purchased a Panasonic CT-1300D monitor about two months ago to be used with my Sanyo MBC-555-2. I picked it up at an auction for a very good price. It works great with the computer on the normal RGB output. However, I more recently added a Video RAM Board to my machine and the Panasonic monitor displays garbage when the computer is in this mode.

One of the reasons I purchased this monitor was because of your review in the September '84 issue of SOFT SECTOR (Page 48). I really like the monitor, but I presently am forced to use an old monochrome monitor when I use the Video RAM Board.

I am told the problem lies in the fact that the regular Sanyo video output is a negative sync signal and the RAM Board puts out

a positive sync signal. The Panasonic only accepts a negative sync. As yet, no one has been able to help me find some way of modifying the monitor so that it will accept both signals.

Eric Burstein, M.D.
Columbus, OH

Editor's Note: We have had a few reports of this problem and have confirmed it with a Panasonic CT-1300D and Video RAM Board here at the SOFT SECTOR editorial offices. At the time of the review, the Video RAM Board did not exist, and the CT-1300D works very well with the unmodified Sanyo 550/555.

A representative of Panasonic's TV Division tells us that they are aware of the situation, but have no suggestions as to any solution. They did say that the current Panasonic RGB monitors (such as the CTF-1495M, which replaced the CT-1300D) work fine with the IBM-type RGB output of the Video RAM Board and the MBC-775, as well as the 550/555's normal RGB output (which meets the same specs as the Panasonic JR-200U and the NEC PC-8001A and PC-8801A).

This problem appears to be quite common, since many 550/555 owners have the CT-1300D monitor. Other than going to a different monitor such as the CTF-1495M, however, we don't know of any solution to the problem. The CTF-1495M should also give a somewhat clearer display because of its fine-pitch picture tube. Also, Sanyo's CRT-50 and CRT-70 RGB monitors work well on both outputs without any change in switch settings.

Continued on Page 19

TLS — The Perfect Companion To The Sanyo 550 Series

Christmas Day, 1984. She had shopped in earnest since early in November for something her mother would use and not put on the shelf of the hall closet as soon as the holidays were over. Ever since she could remember, it had been difficult to find her mother a gift. But this year, she hoped, would be different. Wrapped in bright colored paper beneath the tree sat a new Sanyo MBC-555 with 256K and double-sided drives.

As Mom delicately opened the big box, her eyes lit up with excitement. "But how am I going to learn how to use the thing?" she asked. "I don't know the first thing about computers."

Fortunately, darling daughter had also purchased the Total Learning System (TLS) MS-DOS tutorial for the Sanyo. And having learned enough in the store to know to put the diskette in at the A> prompt, she loaded the program and sent the computer merrily spitting up a most excellent teaching tool. Mom watched her as she went through the first few screens, then pushed her out of the way. After a few hours, Mom was able to grasp the fundamentals of MS-DOS. Later, she was seen hovering over the *Operator's Guide* well into the night.

At \$39.95, TLS pays great attention to detail and incorporates easy-to-understand graphics in this multi-level tutorial. The first-time user starts out with first-time material: the keyboard, the nature of the RETURN, CONTROL, and ESCAPE keys, and the numeric pad, just to name a few. From there you advance to the care and handling of diskettes. A feature I found especially inventive was a graphics display of a diskette. To illustrate the importance of write-protection, a little write-protect tab comes out from the side of the screen and places itself on the disk.

More advanced users can skip to a different section of the tutorial. Further, if you leave the tutorial, TLS remembers which sections you have completed and returns you to where you were. Functions which are often taken for granted, like switching the default drive and setting the date and time, are well documented and organized. Although some of the quizzes are excruciatingly simple for the experienced user, the novice will find them invaluable, especially if he or she has never been exposed to computers and/or MS-DOS before. Larger sections of the program center on formatting, copying using DISKCOPY, copying using COPY and other commands.

If you have used a Sanyo before, you will notice the absence of the DELETE command to purge files from MS-DOS. The TLS tutorial uses the command ERASE instead. It was news to me that this command even existed, but evidently it works the same way as DELETE. Several tests on my system failed to discover any difference.

TLS has more advanced sections on subdirectories, using and understanding the manual, and exiting programs. The manuals, as some of you well know, are not the most

complete or accurate publications. The syntax knowledge required to understand system commands is somewhat overwhelming to someone unfamiliar with computer manuals. TLS exercised forethought by including this section in the tutorial.

Compare, for a moment, the Sanyo to the Commodore 64. One error Commodore made with the 64 was the lack of easy-to-swallow documentation and instructions on basic rules and BASIC commands. The documentation which really helped people had to be supplied many months after the 64's introduction by third party publishers. From the feedback I get from Sanyo users, we may be seeing computer history repeat itself. Many folks already familiar with micros found the *Sanyo Operator's Guide* to be of only marginal use, and novices who ran the many error-laden examples experienced needless hours of frustration. Then Sanyo comes along and charges up to \$50 each for "reference manuals." The nerve! We should applaud TLS for its excellent efforts in helping me, Mom, and you the user to better experience the advantages that the salespeople tell us about.

If you are considering purchasing a Sanyo or need a little help with the one you own, I strongly recommend you find the \$39.95. This package will give you a good return on your investment. Included with TLS at no extra charge is the TLS Tutor for WordStar and MailMerge, an audio cassette that offers interactive training instructions while you are actually using these programs.

I hope we can look forward to more tutorials from TLS.

(Total Learning Systems, 2005 West Cypress Creek Road #4, Ft. Lauderdale, FL 33309, 305-943-1702, "Sanyo Bonus Pack" with TLS and TLS Tutor-WordStar/MailMerge, \$39.95)

— George M. Smart, Jr.

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Welcome to this, the newest addition to the **SOFT SECTOR** lineup. The "Soft Soapbox," missing from our pages since the premier issue, is being revived as an avenue for the editorial staff of **SOFT SECTOR** to pass along information to the readership. Although an editorial page, for lack of a better term, you probably won't be reading any scathing attacks, controversial opinions or one-man crusades. Well . . . maybe . . . if we encounter any causes worth championing. But initially, at least, that's not the purpose.

Instead, you will find news that we feel is of interest to you as a Sanyo computer user and **SOFT SECTOR** reader. You will find announcements of planned additions to the magazine, new products and services, and future events. We have several surprises planned for the coming months, and you will read about them here first.

Believe me, it would be a study in understatement if I told you that activity around the **SOFT SECTOR** offices has been somewhat hectic lately. The response to the release of **SOFT SECTOR ON DISK** has surpassed even the most wide-eyed expectations, and getting the initial copies into production was "a bear." Coupled with the fact that reader surveys have been pouring in by the hundreds each week, it has made for a rather exciting and eventful beginning to spring. Never a dull moment, as they say!

And speaking of reader surveys . . . yes, it's the moment that you've all been waiting for. As promised, on March 1st we held a drawing of the returned surveys with the prize being a Video RAM Board. The winner of the drawing is Krzysztof Zachariasiewicz, of San Mateo, Calif.

After numerous attempts through every circuitous, roundabout route that you can imagine, we were finally able to contact Mr. Zachariasiewicz to make the award. It seems that he, like a lot of us these days, spends all of his time at work! But we hope that you can find the time to enjoy your new RAM Board, Krzysztof. Congratulations. And a special thanks to the folks with Sanyo for helping out with the prize.

Just from glancing over all of the returned surveys, we have gathered some very interesting comments and suggestions. At this time they are being entered into a database on one of our 555s and next month, when they

are in a form that we can make more sense of, we will devote this column to the results.

One comment stands out above all the others, though, and deserves a response merely by virtue of the number of returned surveys that it appeared on. No one wanted to tear the page from their magazine! Well, we made the assumption that everybody in the modern world has access to a copy machine and would copy the survey if they didn't want to deface their issue of **SOFT SECTOR**. Many did, but still remarked about it to bring our thoughtlessness to our attention. For this, we extend our apologies.

And now, on to another little excitement generator!

Have you ever written a one-line BASIC program and been astounded at the power potential in a single line of code? Well, just for the fun of it, we are going to begin The First Great **SOFT SECTOR** One-Liner Contest. The rules are straightforward and simple: Begin the program with the number 1 and end it in a single line. Anything else goes.

We will accept entries in both Sanyo BASIC and BASICA for those of you with Video RAM Boards or MBC-775s. We *will* be awarding appropriate prizes — we just don't yet know what they will be! And the most impressive entries will be published each month for everyone's enjoyment. Incidentally, we will consider the act of entering the contest as tacit consent to publish your routine.

It will not be necessary to submit the entries on disk, although it would certainly make life a little easier on us around here (and, indeed, could very well influence the judging slightly). Multiple entries will be accepted. Include a printed listing with a short title and explanation of what the program does and send it to The First Great **SOFT SECTOR** One-Liner Contest, P.O. Box 385, Prospect, KY 40059.

Ah, yes . . . a deadline. Well we have enough deadlines around here (and, in fact, we're in another dead heat to meet the one for this issue). So we will put no deadlines on entries for this contest. After all, we want to keep it as fun and relaxed as possible.

Now fire up BASIC and let the contest commence. Next month we will take a look at the some of the first entries.

— Kevin Nickols

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Adding, Changing And Rearranging With Filters

By Danny Humphress
Soft Sector Technical Editor

Perhaps you will remember our most recent encounter when we studied the ancient rites of data plumbing. We examined the remarkable similarities between the craftsmen of the ancient waterways and the recent new breed of plumbers, who direct their electronic streams through myriad paths and pipes and filters.

Toward the end of that particular installment, we began discussing filter programs and exploring the possibilities of using them to rearrange and reformat files. Today we'll take a closer look at SORT and the other two filters that are available for MS-DOS 2.11.

[Editor's Note: Most of the commands covered in this installment of "Mastering MS-DOS" are not supported by MS-DOS Ver. 1.25. The filters mentioned, SORT, MORE, and FIND, are not included on the MBC-550/555 system disk, but are integral parts of the MS-DOS operating system nonetheless. They are included on the system disks packaged with the MBC-775 and with Sanyo hard disk drives. Also, MORE is supplied on the Video RAM Board system disk and SORT, at least, is included on the MS-DOS 2.11 System Utilities Disk available for \$15 from Sanyo Business Systems Corporation, Customer Support — Computer Division, 51 Joseph Street, Moonachie, NJ 07074. Only certified checks and money orders are now being accepted.]

In the typical sense, a filter is a device that allows only certain substances, gasses, light or radio waves to pass through. You'll find filters in your coffee maker, under your car hood, on your camera lenses and even in your computer's operating system. As with so many other words, filter has been bastardized by the computer industry. Filter programs not only filter out unwanted data, they can also add to it, rearrange it, or change it completely. The fundamental concept is the same though; data passes through a filter and is changed one way or another.

Since filters work with data files, we're going to need a data file to play with. We're going to use a file that contains a list of cities. Use EDLIN (remember EDLIN?) to enter the following list into a file called CITIES. It will look familiar to you if you have been keeping pace with this series.

Palo Alto,	CA
Orlando,	FL
Denver,	CO
Los Angeles,	CA
Chicago,	IL
Louisville,	KY
Atlanta,	GA
San Francisco,	CA
Miami,	FL
New York,	NY

Notice that the state abbreviations are aligned in a column. The reason for

this will become apparent later. To get you started on the right (or left) foot, "GA" is exactly seven spaces from the comma after "Atlanta." All state abbreviations should be in the same column as "GA."

SORT

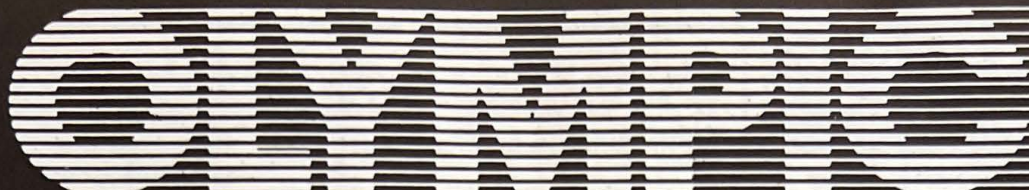
SORT was used last month to sort the disk directory in ascending alphabetical order. SORT can do more than just a simple ascending sort. Using switches in the command line, you can reverse the order of the sort and use any column as the beginning of the sort key.

To refresh your memory, let's just do a simple sort on the CITIES and let the output go to the display:

SORT < CITIES ENTER

The output should look like this:

Atlanta,	GA
Chicago,	IL
Denver,	CO
Los Angeles,	CA
Louisville,	KY
Miami,	FL
New York,	NY
Orlando,	FL
Palo Alto,	CA
San Francisco,	CA



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The /R switch reverses the order of the sort. The following command will sort the same file in reverse order:

SORT /R < CITIES ENTER

The result will be as expected:

San Francisco,	CA
Palo Alto,	CA
Orlando,	FL
New York,	NY
Miami,	FL
Louisville,	KY
Los Angeles,	CA
Denver,	CO
Chicago,	IL
Atlanta,	GA

For what is supposed to be an advanced subject, doesn't this seem simple?

Now we come to the reason for aligning the state abbreviations. We're going to sort the list by state with the /+ switch. Since the state begins at Column 16, we must tell SORT to begin with that column. The following command will accomplish this:

SORT /+16 < CITIES ENTER

The result is a list sorted not by cities, but by state:

Los Angeles,	CA
San Francisco,	CA
Palo Alto,	CA
Denver,	CO
Orlando,	FL
Miami,	FL
Atlanta,	GA
Chicago,	IL
Louisville,	KY
New York,	NY

MORE

MORE is a great command. I always use it after the first serving of my mother's delicious broccoli casserole. Oh, it's also an MS-DOS filter.

You know how annoying it is to have long output zip right by, scrolling off the screen at warp speed. If you have more than 22 or so entries when you pull a directory, you'll have to be quick on the CTRL-S keys to catch the first entries. The same is true of TYPEing

large files to the screen. The computer is just too fast. MORE tames the output and causes it to pause after displaying each page and patiently wait for you to press ENTER to continue to the next. Of course, the /P switch can be used with the DIR command to make it pause, or Sanyo's TYPEF utility rather than TYPE, but MORE has its own distinct purposes.

If you have a lot of files in your disk's directory, type this command:

DIR | MORE ENTER

A page of the directory is displayed and "— MORE —" prompts you to press ENTER to continue. This will happen for all but the last page of the directory. Should your directory be shorter than one page, nothing special would happen; you would just get a normal directory.

The above command used the pipe symbol to route the output of one command into another command or filter. Remember that a pipe (|) routes data between two commands and that a greater-than (>) or a less-than (<) redirects output of a command to a file or a device.

Suppose we had a large file we wanted to view. We would normally TYPE the file to see it on the display, but a large file would scroll by too fast. Now, if we route the output of TYPE through the MORE filter, we could view the file at our own pace.

Since we don't have a file that's that long, let's take the CITIES file and make it four times as large. We'll use a special form of the COPY command for this that I'll not try to explain at this time. Just type and enter the following commands:

```
COPY CITIES CITIES2
COPY CITIES+CITIES2 CITIES
COPY CITIES CITIES2
COPY CITIES+CITIES2 CITIES
```

TYPE the file to see that it's our old familiar CITIES file repeated four times. Now type it piping the output through the MORE filter:

TYPE CITIES | MORE ENTER

We could also use MORE to display the file with the same results by using it instead of the TYPE command much as we would SORT:

MORE < CITIES ENTER

Unlike SORT, MORE has no switches to complicate matters. Using it for any command is just as simple as in the above examples.

FIND

FIND is a filter which is used a bit differently from SORT and MORE. It is more of a file utility than a filter. FIND searches through one or more files for a specified string of text. It is useful as a quick way to locate items in a long list and can even be used as a crude indexing system.

We'll use our CITIES file as an example. If you did the example for the discussion on MORE, you'll need to use EDLIN to trim down the file to its original 10 lines or just re-create the file. With the original 10-line file on the disk, type this command:

```
FIND "CA" CITIES          ENTER
```

FIND will locate and print all lines containing "CA" like so:

```

CITIES
Palo Alto,      CA
Los Angeles,    CA
San Francisco,  CA

```

The first line tells us the following list is from the CITIES file. The lines that follow are those that contain the string "CA." Remember that, to the computer, "CA" and "Ca" are very different. Pay close attention to uppercase and lowercase when entering strings.

FIND has three switches which may be used to alter its operation. The /V switch causes FIND to list only the lines that do not contain the specified string. Adding /V to our example above gives us quite different results:

```
FIND /V "CA" CITIES      ENTER
```

The results:

```

CITIES
Orlando,      FL
Denver,       CO
Chicago,      IL
Louisville,   KY
Atlanta,      GA
Miami,        FL
New York,     NY

```

Suppose we just wanted to know the number of California cities in our file. Another FIND switch, /C, will display only a count of the lines that match the string. Try this command:

```
FIND /C "CA" CITIES      ENTER
```

Because there are three lines containing "CA," the result will be:

```
CITIES: 3
```

The /N switch may be used to display the relative line number of each line within the file along with the lines themselves. Type this command:

```
FIND /N "CA" CITIES      ENTER
```

The list will contain the relative line numbers in brackets:

```

CITIES
[1] Palo Alto,      CA
[4] Los Angeles,    CA
[8] San Francisco,  CA

```

The /N switch may be combined with /V to display the lines and line numbers for lines which do not contain the string:

```
FIND /V /N "CA" CITIES  ENTER
```

This gives us this list:

```

CITIES
[2] Orlando,      FL
[3] Denver,       CO
[5] Chicago,      IL
[6] Louisville,   KY
[7] Atlanta,      GA
[9] Miami,        FL
[10] New York,    NY

```

As you are beginning to see, filters can be quite useful for developing and maintaining data files without involving an applications program. In the next installment of "Mastering MS-DOS," we'll begin to discuss automating the operation of DOS through batch processing, and discover even more of the power available to the MS-DOS user.

(Danny Humphress, SOFT SECTOR's technical editor, is the owner of a computer software and consulting firm in Louisville, Ky. Danny brings to SOFT SECTOR his extensive experience with small business computers and applications software.)

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Disk Menu

By J.R. Jones

If you have ever wished there was a simple way to combine several programs of a similar nature together on a single disk and move easily from program to program, then *Disk Menu* is for you!

I originally developed the program to facilitate my correspondence. I had written separate programs to print mailing labels, letterheads for each family member, and to address standard business envelopes. I soon tired of changing disks and typing BASIC commands. One day the thought occurred to me to copy the system and all of the aforementioned programs onto a single disk. Still a lot of command typing was necessary, so the idea for *Disk Menu* was born.

First, type in the listing exactly as shown in Listing 1. After debugging, save it under the title DISKMENU on a new disk containing your operating system. This will permit you to use up to seven programs in addition to the operating

(J.R. Jones, Th.D., is a Southern Baptist Minister and computer hobbyist. His computer experience began in 1982 with a TRS-80 Color Computer before purchasing a Sanyo MBC-555. He may be contacted at RR #14, Box 202A, Connersville, IN 47331.)

system, subject to disk storage limitations of course.

Next, copy any similar seven programs you wish to the disk containing *DiskMenu*. Your disk should now contain the operating system, *DiskMenu* and the seven programs of your choice.

Now you must LIST *DiskMenu* and change program lines 8 through 14 from PROGRAM1, etc. to the names of the seven programs you have saved to the disk. Note that these program names cannot exceed eight characters and must be identical to the characters you used in saving them to the disk. For example, if you saved a program called *Envelope Addresser* to your disk using the characters ENVADD, that is exactly the way it must be typed somewhere between lines 8 to 14 of *DiskMenu*.

After you have completed the above task for each of your seven programs, take note of Listing 2. These three lines must be added at some appropriate place to each of the seven programs you are going to use with *DiskMenu*. Generally, they will be added to the end or concluding part of your programs. You will need to change the line numbers accordingly. Don't forget to save the newly edited version of your programs!

Once you have completed these steps you will have what I call a "circular" program disk. You can "boot up" your computer because you have the operating system on the disk. Then type BASIC~DISKMENUE and ENTER. *DiskMenu* will appear on the screen. Each of your program names will have a letter to the left of the title. Simply press the appropriate letter and the computer will automatically LOAD

and RUN the chosen program. If you have made the proper addition to your program as per Listing 2, when the program is concluded and the question "Do you wish to return to Disk Menu? (Y/N)" appears on the screen, simply press 'y' and the computer will automatically LOAD and RUN *DiskMenu*. You have now come "full circle" and are back where you started. You may now choose to automatically LOAD and RUN any other program on the disk by pushing the appropriate letter.

In case you have a number of short programs and want to use *DiskMenu* for more than seven programs you may simply make the appropriate changes in lines 7, 18, 19, 28, 30, 35, and 37. You will also have to RENUM the listing of *DiskMenu* so you will have room to add additional programs between present lines 14 and 15.

I have found *DiskMenu* to be of great help in simplifying and saving the time spent at my trusty Sanyo MBC-555. It has also aided me in organizing my programs. Once most of your programs are converted to a disk containing *DiskMenu*, you don't even have to use the MS-DOS command DIR to find out what is on the disk or what title to use to load the desired program. Simply insert the customized *DiskMenu* disk, type BASIC~DISKMENUE, and away you go!

If you don't want to key in the program, send a new formatted disk with mailer, the exact titles of your seven or more programs, your return address and \$10 to cover the costs of time and handling and I'll return to you a customized version of *DiskMenu*.

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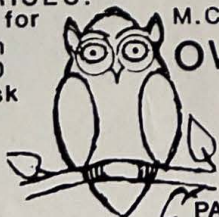
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128K Sanyo 550/555 required

\$34.95

MI-KEY by Dean Brown

This fine utility program from MichTron actually does the typing for you! MI-KEY lets you redefine any of the keys on your keyboard to represent other keys, a combination of keys, or even complete commands. With this truly contemporary software package you can redefine up to 84 keys to stand for any string of up to 133 characters long (up to 5K)!

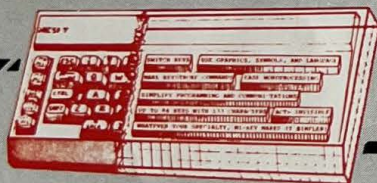
You can finally switch the difficult, more commonly used keys (like the colon or quotes) with simpler, less used keys (like the semi-colon and apostrophe) to put programming and word-processing back into reach. Even the Graphic and Greek Mathematics symbols can be redefined for easy access! Whatever your specialty, MI-KEY can make it simpler — even language applications! Put an instant translator at your finger tips. Change the standard "QWERTY" key position to French "AZERTY" style, as well as bring the Sanyo French punctuation symbols to surface!

No more tiresome typing of all those redundant phrases and characters that occur in your daily reports and documents. MI-KEY gives you the ability to type those repetitive phrases or commands with single key strokes. Even complex control codes for WordStar and complete command strings for modem programs or assemblers can be reduced to the touch of a single button.

Of course MI-KEY lets you save your changes to disk for easy updates and changes. There's even a complete menu of all defined keys. And once MI-KEY is installed, it remains active in your other programs, even WordStar and BASIC. In addition to all these features, MI-KEY even fixes the CalcStar cursor to work with the arrow keys! Don't make your fingers do the walking; let MI-KEY do it for you.

128K Sanyo 550/555 required

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MUDPIES by Phillip McKenzie and Jeff Sorenson

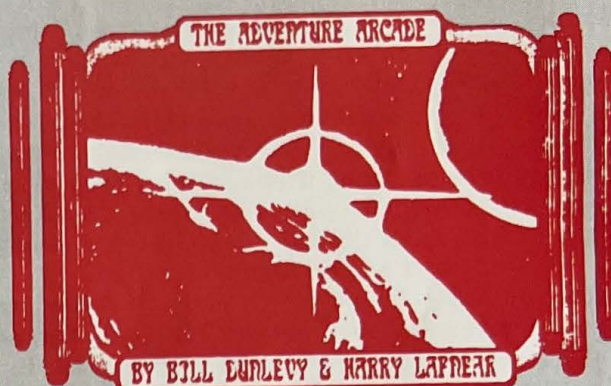
Arnold is a mischievous young boy who's sense of humor sometimes goes astray. When the circus comes to town, he can hardly wait to see it. But the circus isn't quite what Arnold expects, and soon enough he gets bored. When the clowns bring on their crazy act, Arnold decides he's had enough! He picks up a MUDPIE and throws it at the nearest clown, hitting him smack in the face. Next thing you know, the air is swarming with mudpies. But the clowns don't think it's so funny. They start throwing things back at Arnold and try to catch him. Pretty soon the place turns into a REAL circus!

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(joystick recommended)**

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Listing 1: DISKMENU.BAS

```

1 REM *** "DISK MENU" *** BY DR.J.R. JONES, RR #4, CONNERSVILLE, IN, JULY 1984
2 COLOR 2,0:CLS
3 SYMBOL(165,0),"DISK MENU",4,3,3,0
4 SYMBOL(185,30),"(Sanyo MBC-550/555 Version 1.0)",1,2,,0
5 SYMBOL(175,50),"By Dr. J.R. Jones",2,1,,0
6 LOCATE 9,22:PRINT STRING$(36,"_")
7 DIM FILE$(17)
8 FILE$(1)="PROGRAM1"
9 FILE$(2)="PROGRAM2"
10 FILE$(3)="PROGRAM3"
11 FILE$(4)="PROGRAM4"
12 FILE$(5)="PROGRAM5"
13 FILE$(6)="PROGRAM6"
14 FILE$(7)="PROGRAM7"
15 FILE$(8)="BASIC"
16 FILE$(9)="MS-DOS"
17 PROG=0:II=0
18 FOR ROW=11 TO 19
19 II=II+1: IF ROW>17 THEN TB=2 ELSE TB=1
20 LOCATE ROW+TB,34
21 COLOR 0,2:PRINT " "+CHR$(II+64)+" ";
22 COLOR 2,0:PRINT " "+FILE$(II)
23 NEXT ROW
24 COLOR 3,2:LOCATE 24,22:PRINT"PRESS THE LETTER NEXT TO YOUR CHOICE":COLOR 2,0
25 A$=INKEY$:IF A$="" THEN 25
26 AV=ASC(A$):IF AV>90 THEN AV=AV-32
27 PROG=AV-64
28 IF PROG > 7 THEN GOTO 30
29 GOTO 34
30 IF PROG<1 OR PROG>9 GOTO 17
31 IF PROG=8 THEN CLS:END
32 IF PROG=9 THEN CLS:SYSTEM
33 END
34 II=0
35 FOR ROW=11 TO 19
36 II=II+1
37 IF ROW>17 THEN TB=2 ELSE TB=1
38 LOCATE ROW+TB,34
39 IF II<>PROG THEN COLOR 0,0 ELSE COLOR 0,3
40 PRINT "RUN";" "+FILE$(II)
41 NEXT ROW
42 COLOR 2,0
43 RUN FILE$(PROG)+".BAS"

```

Listing 2:

```

1000 CLS:LOCATE 13,17:PRINT"DO YOU WISH TO RETURN TO DISK MENU? (Y/N) "
1010 CH$=INKEY$:IF CH$="" THEN 1010
1020 IF CH$="n" THEN 1 ELSE CLS:RUN "DISKMENU"

```


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PRAISE TO THE MANAGER

Editor:

SOFT SECTOR furnishes to its readers a mixed bag of articles and help for a variety of computer users. For example, I have painfully copied several of the programs you made available to your readers and use some of them every day. One program in particular, *Database Manager* (January '85, Page 16), really proved to be worth the time it took me to copy it. Although I have at least six database programs available at home and work, such as *Condor*, *dBASE II*, *1-2-3*, and *PC3*, all of those are not as user friendly as the one I got free from SOFT SECTOR. After copying it, I made a few changes to suit my own needs (I needed a formatted output), compiled it using a BASIC compiler, and then installed it on twenty of our HP's awkward screen addressing (no locate function), it was a snap.

No manual, no tutorial disk, nothing! Just hop on and manage data — perfect for handling numerous, small amounts of data. Thanks. Everyone thinks I'm a great programmer. Who is there to tell?

J.M. Bowman
Lordstown, OH

CANADIAN CONNECTION

Editor:

In your club listing, you don't have any in the Montreal area, so is there any way for you to put me in contact with other Sanyo users in my general area? Thanks. [9290 Berri, Canada, H2M 1P9.]

Martin Ujlaki
Montreal, Quebec

Editor's Note: This should do the trick, Martin.

STILL SEARCHING

Editor:

I would like to include myself as someone in search of other Sanyo users in the LeHigh Valley or Central Jersey area. Also, does anyone know of any Sanyo BBSs out there? [1111 Mica Circle, 18017.]

John Orlando III
Bethlehem, PA

Editor's Note: Several bulletin boards for the Sanyo 550/555 series can be found listed in our "Clubs, Clubs, Clubs" section on Page 64.

Editor:

I would like to get in contact with quad-density (800K) drive users in the Cincinnati area. They are apparently rarer than I thought. I thought they were selling like hot cakes! [P.O. Box 8240, 45208.]

Jim Grote
Cincinnati, OH

TAMING OF THE SHREW

Editor:

What follows is an explanation of how I patched IO.SYS to incorporate the patch

to change the beep on the Sanyo 550/555. First one must FORMAT a disk without the /S command. This formats the disk without putting IO.SYS and MS-DOS.SYS on the disk. Now type in DEBUG MS-DOS.SYS on the system disk. This loads MS-DOS.SYS into memory.

Now put the disk back in that was formatted without the system. Type in the write command, W. This puts the file MS-DOS.SYS on the disk, but it is no longer hidden. Now put a system disk back in drive A: and type in N IO.SYS. Then type in the load command, L. This loads IO.SYS into memory. Next, using the search command, S, search for the first four bytes of the old code that was mentioned in the February issue of SOFT SECTOR (Page 82). This should yield an address where the old code resides.

In IO.SYS Version 1.0, this address is Hex 134A. Now, subtract five from this address, yielding Hex 1345. At this address, enter the "new" code:

```
B9 20 00 B0 35 34 08 E6 3A 08 E6 3A 8A
E0 FE CC 75 FC E2 F4 C3
```

Take out this disk and put the non-system disk back in and issue the DEBUG write command, W.

You should now have a disk containing MS-DOS.SYS and IO.SYS, with the only difference being that they are no longer hidden files. If you also put FORMAT.COM on this disk and FORMAT a disk in drive B: with the /S option, the disk in drive B: will be formatted as a system disk with the two files, MS-DOS.SYS and the new IO.SYS, once again as hidden files.

Kurt R. Wolfe
Indianapolis, IN

PATCH & REPATCH

Editor:

I have a dilemma. I've received a lot of mail about my article on speeding up *WordStar* on the Sanyo, which was published in the November issue of now-defunct *MicroComputing* magazine. The mail has slowed to a trickle, but is now starting up again. My published patch, it seems, does not work correctly when the new Video RAM Board is in use. Since SOFT SECTOR is now the acknowledged information source for Sanyo users, I'm hoping you'll see fit to help me by publishing this short note.

Why the patch doesn't work with the Video RAM Board: When I originally wrote the patch code, I saved a few bytes of space by ignoring the video page number in the code which executes the new screen functions. This was perfectly legal and acceptable to the original (standard) Sanyo video system, since it ignores page information as well. The new Video RAM Board, however, does recognize separate alphanumeric pages. (There are four of them, each software-selectable, just like the IBM.) Consequently, the "Get-Cursor-Position" and "Erase-to-End-of-Line" functions in my original patch quite often operate on one of the "hidden" video pages, depending on what happens to be in the BH register when they are invoked. Not good!

What to do about it: Fixing the patch for compatibility with the new video system is not too difficult — a couple of additional instructions have to be inserted within the code. Rather than publish the new code, I offer two ways to obtain it:

1) Send a business-size SASE and I will return a printed listing of the new patch

Continued on Page 90

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Using READ/DATA Statements

By Fred Blechman

**Soft Sector
Contributing Editor**

(Fred Blechman, an acknowledged authority on home computers, has written several articles and books related to microcomputers. He is self-taught in electronics and computer BASIC programming and specializes in writing for beginners. This article is based on material from a forthcoming book by the author, Sanyo MBC-550/555 Beginner/Intermediate Guide, soon to be published by Holt, Rinehart and Winston, a division of CBS College Publishing.)

Copyright© 1984 by Fred Blechman.

Information provided to a computer is generally referred to as "data." The processing instructions are called a "program." Data and programs are numbers and strings that represent formulas, names, commands, variables — just about anything. To eliminate being unnecessarily specific, I'll use the term "data" to include programs.

Data can be entered into the computer from the keyboard, from another computer (either directly wired or through a telephone "modem"), or from a storage device such as a cassette recorder or disk drive.

In this article we'll cover putting data into the computer's memory directly from the keyboard, and arranging it in organized fashion using "arrays."

READ/DATA/RESTORE

The INPUT statement in a program allows you to enter specific information — values, strings or whatever — into the computer's memory directly from the keyboard. Generally, unless this data is SAVED on disk, it is lost when a RUN or NEW is entered, or another program is LOADED, or the computer is turned off.

The easiest way to retain information within a program itself is by using READ/DATA statements. The DATA

statements, held in program lines, are used with the READ statement.

It is essential that you understand READ/DATA if you intend to work with BASIC programs. This set of commands is among the most powerful in BASIC and is easily used if you understand and observe a few rules.

DATA Statement Rules

DATA statements can be anywhere within the program — they do not have to be before the READ statement. However, since every DATA statement starts with a program line number, the DATA statements' program lines themselves assume a sequential order.

The word DATA must be the first word on that program line, and DATA items are separated by commas and only commas. If strings are used, they do not need to be enclosed in quotation marks unless they contain typical "delimiters" like commas, colons or semicolons within the string. If you're not sure, enclose the string in quotes — but you'll still need a comma between strings.

When the READ statement is used, it seeks the very first DATA statement in the program and starts there — wherever it is. Actually, the computer keeps track of this location in memory with a "DATA pointer" — a memory address — and

each time a single element of DATA is READ, the pointer moves to the next DATA item.

If the DATA is to be used more than once, you must use a RESTORE statement to return the DATA pointer to the beginning of the DATA. Unlike some computers, Sanyo BASIC does not allow you to RESTORE to a particular line number — it goes back only to the first DATA statement.

Using READ and DATA

A simple example of READ and DATA use was shown earlier in this series and is repeated here as Listing 1. Numbers are used in DATA statements in program Line 170, with the READ statement in Line 120.

Line 120 READs the first DATA item, which happens to be way down at Line 170. While there is no hard and fast rule about DATA line placement, programmers have a tendency to place them either at the very beginning of a program, at the end of a program, or closely following the associated READ statement. The speed of a program's operation is affected by the position of DATA statements in a program if there are many of them and they are used frequently. For short programs such as the examples used here, there is hardly any difference.

In effect, Line 120 says, "Take the next DATA item and assign this value to the variable C." The next DATA item, in this case, is the first DATA item — the number 10. So variable C is now equal to 10.

Line 130 checks to see if the value of C is 100. It isn't, so the program falls through to the next line, 150, where the value of C becomes the TAB value for the LPRINT command, which also LPRINTs the value of C.

The GOTO 110 in Line 130 returns the program for another DATA item. This time the number 15 is used, since it is the next DATA item. And so it goes, until finally the number 100 is READ and program Line 130 ENDS the program.

RESTOREing The DATA

Notice that this program does not use any DATA item more than once, so RESTORE is not needed. However, make these minor changes and this program will RUN until you hit the BREAK key:

```
Change Line 130 to:
IF C=100 THEN 180
Add to Line 180:
RESTORE:GOTO 110
```

Now when C=100, the program RESTOREs the DATA, clears the screen and repeats the entire sequence.

Using Strings With READ/DATA

An elegant way of printing the DATE\$ and TIME\$ is provided by the program shown in Listing 2. Figure 1 shows some typical results.

The INPUT statement of Line 20 requests three INPUTs. When you enter them from the keyboard, you must put a comma between each one and you must have three INPUTs total (no more, no less) before you hit ENTER or you'll get a "Redo from start" error message on your screen. Sanyo BASIC is very well error-trapped for INPUTs. For example, if you use a letter instead of a number for any of these INPUTs (since the M, D and Y following the INPUT statement are numeric variables and not string variables), you'll also get this error message.

Line 30 READs two DATA items each time, assigning the first one to numeric variable A and the second one to string variable M\$. Line 40 then compares the value of A to see if it is the same as the number (M) you entered for the month. If so the program goes to Line 60. If not, Line 50 sends the program to READ two more DATA items.

Assuming you used a number from one to 12 for the month (since this program is not error-trapped to prevent you from using an invalid month number), Line 40 will find a match and GOTO Line 60. Here it PRINTs two blank screen lines. On the next line the computer prints the last M\$ (month) retrieved from DATA. Next, immediately following the month, the day (D) is printed. Notice that since D is a number, it automatically has a blank space ahead of it.

Unfortunately, the number representing variable D has a blank space after it as well as before it — a great annoyance sometimes. Since we wish to PRINT a comma directly after this number, we have to "backup" the cursor one space. This is done with program Line 70.

Line 80 PRINTs the comma, a space and "19" for the first two digits of the year. But here again we're faced with the blank-space-before-a-number problem. If we just PRINT variable Y, we will have a space after the 19, and we certainly don't want that. The MID\$ and STR\$ functions take care of our needs.

The STR\$ function converts Y to a string so MID\$ can reach in and extract two characters, starting with the second character (to bypass the leading blank). The result, a two-digit number with no leading blank, is now printed directly after the 19, and is then followed by TIME\$ (after some blank spaces).

Line 90 PRINTs two blank lines, RESTOREs the DATA to the beginning, and then returns to Line 20 for another INPUT.

The DATA has been put on three lines — 200 through 220. Although up to 255 characters can be put on a program line, that results in an "ugly" program listing, with those lines considerably longer than other program lines.

The program has been kept simple, so it is not correct for any dates before 1910 or after 1999, since the year would print improperly.

A Real-World Example

When I bought my first computer, a Radio Shack TRS-80 Model I, Level I 4K machine, my intention was to learn to program the computer to help me in my Amway business. As an Emerald Direct Distributor, with hundreds of distributors in my personal group and literally thousands "down-line," I found file card systems clumsy and restrictive. I struggled learning BASIC and quickly found my equipment too limiting. The Level I BASIC language and the small 4K memory was not sufficient to allow any significant programming.

When I moved up to Level II with a 16K memory, I was amazed with how much could be done with a system that is considered very modest by today's standards. I wrote 14 useful Amway programs using that cassette-based system, and for the larger disk-based TRS-80 Models II, III and 4. The programs have been enhanced and translated to Apple, IBM PC and Sanyo BASIC as the *AMBIZ-PAK*, and I have almost 1,000 users around the world.

Listing 3 is an abbreviated version of a program I wrote to keep track of my multi-level distributor organization. Those I personally sponsored are "group leaders," and this program allows me to quickly PRINT a list of all the distributors in each group, showing the annual renewal status of each distributor. This is very time consuming with file cards, but a natural activity for the computer. I can also list all distributors, or only those not renewed. The program, as originally

written, included a "family tree" multi-level breakdown. However, that section included programming we haven't covered yet, so I've removed that function from the program as shown.

This quick translation to Sanyo BASIC from TRS-80 BASIC has "ragged" line numbering and some unnecessary spaces and semicolons, but it works just fine. Most importantly, everything in this program has already been discussed in this series. It is shown here as an example of a program with intensive use of READ/DATA statements. Figure 2 shows a sample output of this program.

When this program is RUN there are two screens of instructions (so no separate documentation has to be hunted down!). You are then asked if you want printer or screen output. This

sets a "flag" (P=1 for printer, 0 for screen) which is used in Line 155 to route the program. Lines 100 to 150 provide a screen menu. The remainder of the program is in "modules" that accomplish the assigned task and then return to the menu.

The DATA statements are entered alphabetically by the distributor name in lines 1000 to 5000, with room for plenty of additions. Adding a new distributor is just a matter of choosing a line number in the alphabetic sequence between existing names. Each DATA line is structured as described on the screen by lines 5100 to 5155. This is only a partial listing of distributors (see the gap between lines 1460 and 3320?) to demonstrate program use.

Because this program is not sophisticated, you can analyze it line by line.

You'll be surprised how many useful subroutines and techniques it contains. Also, it could be modified to use for other record-keeping purposes, such as a club roster showing dues status and sponsor. In fact, it is a very rudimentary form of a dedicated "database" program.

BASIC TRAINING

Next Month

Continuing right along in our "BASIC Training" series, next month we will look at numeric and string arrays — their various forms, how to manipulate them, and several practical examples of their uses. Until then, enjoy the spring weather and be fresh and ready for our next training course.

Listing 1: READ/DATA Example.

```
1000 REM * LET R=ROW AND C=COLUMN
1100 CLS
1200 READ C
1300 IF C=1000 THEN END
1500 PRINT TAB(C);"C has a value of";C
1600 GOTO 1200
1700 DATA 10,15,20,25,30,35,40,45,50,55,60,55,50,45,40,35,30,25,20,15,10,1000
```

Listing 2: Converting DATE\$.

```
100 CLS
200 INPUT "What is the date to convert (MM,DD,YY) ";M,D,Y
300 READ A,M$
400 IF A=M THEN GOTO 600
500 GOTO 300
600 PRINT:PRINT M$;D;
700 LOCATE CSRLIN,POS-1
800 PRINT", 19";MID$(STR$(Y),2,2);" ";TIME$
900 PRINT:PRINT:RESTORE:GOTO 200
2000 DATA 1,January,2,February,3,March,4,April
2100 DATA 5,May,6,June,7,July,8,August
2200 DATA 9,September,10,October,11,November,12,December
```

Figure 1: Converting DATE\$.

What is the date to convert (MM,DD,YY)? 7,25,84

July 25, 1984 17:25:29

What is the date to convert (MM,DD,YY)? 7,23,27

July 23, 1927 17:25:37

What is the date to convert (MM,DD,YY)? 9,21,25

September 21, 1925 17:25:45

What is the date to convert (MM,DD,YY)?

Figure 2: Distributor Sponsorship RUN.

```

DISTRIBUTOR'S LAST NAME?BYRD
DISTRIBUTOR          SPONSOR          GROUP
BYRD                 THOMPSON        SCOTT

GROUP LEADER'S LAST NAME?SCOTT
ABUNDO              ANDERSON        BANKS           BAUTISTA *
BECKER             BONDRA          BROWN           BRUNS
BRUSIE             BURBANK         BURLEWS         BURLEW
BYRD              CARVER          CASTELL         CHARETTE
CHASE *           CONANT          CONEJO          CONTRERAS
CUPINO            URQUIDI         VOLMERANGE      WEISS
WILLIAMSR        WILSON          WITTMAN *       YANCEY *
END

LISTING OF ALL DISTRIBUTORS:
ABUNDO              AGUILERA        ALBAUGH *       ALEMAN
ANDERSON            ARNOLD           ARROYO          BABB *
BANKS              BARNES           BAUM            BAUTISTA *
BECKER            BELLOG           BERTONI         BLANCO
BLECHMANS          BONDRA           BOWEN           BORNCAMP
BORUFF            BRAMMER          BREESE          BRENNAN
BRICKLEY *         CROSS           BROWN           BROWNE
BRUNS             BRUSIE           BURBANK         BURLEWS
BURLEW            BUTT             BYE             BYRAM
BYRD             CALDERON         CALLAHAN        CARPENTER *
CARSTENSENJ *     CARSTENSENV      CARTER          CARVER
CASTELL           CECI             CHARETTE        CHASE *
CHEVALIER *       CLARK            COKER *         CONANT
CONEJO            CONTRERAS        CRAMER *        CROSS *
CUMMINGS          CUPINO           UNDERHILL       URIAS
URQUIDI           VAN WORMER       VEGA            VOLMERANGE
WADE              WALES            WALINSKI        WATKINS *
WEBER             WEIGEL           WEISS           WHITE
WILKEN *          WILLIAMS         WILLIAMSR       WILLIAMST *
WILSON            WITTMAN *        WOODBRIDGE *    WRIGHT *
YANCEY *          END

NON-RENEWED DISTRIBUTORS!!

ALBAUGH            BABB            BAUTISTA        BRICKLEY
CARPENTER          CARSTENSENJ     CHASE           CHEVALIER
COKER              CRAMER          CROSS           WATKINS
WILKEN             WILLIAMST       WITTMAN        WOODBRIDGE
WRIGHT            YANCEY          END

```

Listing 3: Distributor Sponsorship Program.

```

10 CLS
20 REM * DISTRIBUTOR SPONSORSHIP PROGRAM * REVISED 5/20/84 FOR SANYO 550 *
30 REM * COPYRIGHT 1984 FRED BLECHMAN *
40 PRINT : PRINT "          THE PURPOSE OF THIS PROGRAM IS TO ALLOW"
50 PRINT "YOU TO QUICKLY FIND THE SPONSOR AND GROUP LEADER OF"
60 PRINT "ANY OF YOUR DISTRIBUTORS, AND ALSO TO FIND ALL THE"
70 PRINT "DISTRIBUTORS UNDER ANY SPONSOR OR GROUP LEADER...."
75 PRINT : PRINT "ASTERISK (*) MEANS NON-RENEWED DISTRIBUTOR!!"
80 PRINT : PRINT "          JUST FOLLOW THE INSTRUCTIONS AS YOU GO."
90 PRINT:INPUT"PRESS ENTER WHEN READY....";Z$
92 GOSUB 5100
95 CLS : PRINT : PRINT : PRINT "DO YOU WANT PRINTER OR SCREEN? (PRINTER=1, SCREE
N=0)";: INPUT P
100 CLS : PRINT : PRINT "WHICH OF THE FOLLOWING DO YOU WANT?"
110 PRINT : PRINT "(1) DISTRIBUTOR'S SPONSOR & GROUP LEADER"
120 PRINT "(2) ALL DISTRIBUTORS UNDER A GROUP LEADER"
135 PRINT "(3) LIST ALL DISTRIBUTORS"
137 PRINT "(4) DISTRIBUTORS NOT RENEWED"
140 PRINT : PRINT "(TO EXIT PROGRAM, PRESS BREAK KEY...)"
150 PRINT : INPUT "ENTER 1,2,3 OR 4.....";A
155 IF P=1 GOTO 170

```



```

160 ON A GOTO 200,300,500,700
170 ON A GOTO 520,530,550,570
200 CLS : PRINT : PRINT "DISTRIBUTOR'S LAST NAME?";: INPUT D$
210 READ A$,B$,C$,R
220 IF A$=D$ THEN GOTO 250
230 IF A$="END" GOTO 280
240 GOTO 210
250 PRINT TAB( 5)"DISTRIBUTOR"; TAB( 25)"SPONSOR"; TAB( 45)"GROUP"
260 PRINT TAB(5)A$;: IF R=1 THEN PRINT " *";
265 PRINT TAB( 25)B$; TAB( 45)C$
270 GOTO 285
280 PRINT : PRINT "NOT ON LIST. SPELLED CORRECTLY??"
285 RESTORE
290 PRINT : PRINT : INPUT "ANOTHER? YES=1,NO=0";X
295 IF X=1 GOTO 200
296 GOTO 100
300 CLS : PRINT : PRINT "GROUP LEADER'S NAME?";: INPUT G$
310 READ A$,B$,C$,R
320 IF C$=G$ GOTO 360
330 IF C$="END" GOTO 380
340 GOTO 310
360 PRINT A$;: IF R=1 THEN PRINT " *",: ELSE PRINT " ",
370 GOTO 310
380 PRINT C$
385 RESTORE
390 PRINT : PRINT : INPUT "ANOTHER? YES=1, NO=0";Y
395 IF Y=1 GOTO 300
396 GOTO 100
496 GOTO 100
500 CLS : PRINT "LISTING OF ALL DISTRIBUTORS:"
510 READ A$,B$,C$,R
520 PRINT A$;: IF R=1 THEN PRINT " *",: ELSE PRINT " ",
530 IF A$="END" THEN RESTORE : GOTO 540
535 GOTO 510
540 PRINT : INPUT "AGAIN? YES=1,NO=0";W
550 IF W=1 GOTO 500
560 GOTO 100
700 CLS : PRINT TAB( 20)"NON-RENEWED DISTRIBUTORS!"
710 READ A$,B$,C$,R
720 IF R=1 THEN PRINT A$,
730 IF A$="END" THEN PRINT "END": RESTORE : GOTO 750
740 GOTO 710
750 PRINT : INPUT "AGAIN? YES=1,NO=0";U
760 IF U=1 GOTO 700
770 GOTO 100
900 L$=A$: RESTORE
910 READ A$,B$,C$,R
920 IF B$=L$ PRINT TAB( 1)A$;: IF R=1 PRINT " *" : ELSE PRINT " "
925 IF B$=L$ GOTO 910
930 IF B$="END" THEN B$(A)=L$: RESTORE :I=0:A=0: GOTO 630
940 GOTO 910
1000 DATA ABUNDO,CUPINO,SCOTT,0
1010 DATA AGUILERA,PARRY,PARRY,0
1020 DATA ALBAUGH,DAVIS,PARRY,1
1030 DATA ALEMAN,OLSON,OLSON,0
1040 DATA ANDERSON,BURLEW,SCOTT,0
1045 DATA ARNOLD,GALLANT,OLSON,0
1050 DATA ARROYO,PARRY,PARRY,0
1070 DATA BABB,BLECHMAN,BLECHMAN,1

```


1074 DATA BANKS, DIXON, SCOTT, Ø
 1076 DATA BARNES, PARRY, PARRY, Ø
 1080 DATA BAUM, BLECHMAN, BLECHMAN, Ø
 1090 DATA BAUTISTA, SCOTT, SCOTT, 1
 1100 DATA BECKER, SCOTT, SCOTT, Ø
 1110 DATA BELLOG, BLECHMAN, BLECHMAN, Ø
 1120 DATA BERTONI, BLECHMAN, BLECHMAN, Ø
 1124 DATA BLANCO, OLSON, OLSON, Ø
 1130 DATA BLECHMANS, BLECHMAN, BLECHMAN, Ø
 1140 DATA BONDRA, SCOTT, SCOTT, Ø
 1150 DATA BOWEN, MUELLER, PARRY, Ø
 1152 DATA BORNCAMP, KAVON, KAVON, Ø
 1154 DATA BORUFF, OLSON, OLSON, Ø
 1160 DATA BRAMMER, BLECHMAN, BLECHMAN, Ø
 1164 DATA BREESE, BLECHMAN, BLECHMAN, Ø
 1170 DATA BRENNAN, BLECHMAN, BLECHMAN?, Ø
 1180 DATA BRICKLEY, BLECHMAN, BLECHMAN, 1
 1190 DATA BROSS, ROZAS, OLSON, Ø
 1192 DATA BROWN, TOPLIFFE, SCOTT, Ø
 1200 DATA BROWNE, MARTIN, OLSON, Ø
 1210 DATA BRUNS, SCOTT, SCOTT, Ø
 1220 DATA BRUSIE, JORDANC, SCOTT, Ø
 1230 DATA BURBANK, THOMPSON, SCOTT, Ø
 1234 DATA BURLEWS, BURLEW, SCOTT, Ø
 1240 DATA BURLEW, SCOTT, SCOTT, Ø
 1250 DATA BUTT, OLSON, OLSON, Ø
 1260 DATA BYE, DAYS, DAYS, Ø
 1270 DATA BYRAM, MUELLER, PARRY, Ø
 1280 DATA BYRD, THOMPSON, SCOTT, Ø
 1284 DATA CALDERON, BLECHMAN, BLECHMAN, Ø
 1290 DATA CALLAHAN, MUELLER, PARRY, Ø
 1300 DATA CARPENTER, MUELLER, PARRY, 1
 1310 DATA CARSTENSENJ, CARSTENSENV, LOCKWOOD, 1
 1320 DATA CARSTENSENV, LOCKWOOD, LOCKWOOD, Ø
 1330 DATA CARTER, CARSTENSENV, LOCKWOOD, Ø
 1340 DATA CARVER, HEGGE, SCOTT, Ø
 1350 DATA CASTELL, WILSON, SCOTT, Ø
 1360 DATA CECI, OLSON, OLSON, Ø
 1370 DATA CHARETTE, SCOTT, SCOTT, Ø
 1380 DATA CHASE, BURLEW, SCOTT, 1
 1390 DATA CHEVALIER, MUELLER, PARRY, 1
 1400 DATA CLARK, MARTIN, OLSON, Ø
 1410 DATA COKER, SENSENBAUGH, FROMM, 1

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```

1420 DATA CONANT,SCOTT,SCOTT,0
1424 DATA CONEJO,TOPLIFFE,SCOTT,0
1430 DATA CONTRERAS,SCOTT,SCOTT,0
1440 DATA CRAMER,BLECHMAN,BLECHMAN,1
1450 DATA CROSS,OLSONL,OLSON,1
1454 DATA CUMMINGS,DAYS,DAYS,0
1460 DATA CUPINO,STODDARD,SCOTT,0
3320 DATA UNDERHILL,KENT,KENT,0
3330 DATA URIAS,OLSON,OLSON,0
3340 DATA URQUIDI,THOMPSON,SCOTT,0
3350 DATA VAN WORMER,BLECHMAN,BLECHMAN,0
3360 DATA VEGA,BLECHMAN,BLECHMAN,0
3370 DATA VOLMERANGE,SCOTT,SCOTT,0
3380 DATA WADE,RADDATZB,OLSON,0
3390 DATA WALES,MUELLER,PARRY,0
3400 DATA WALINSKI,DAYS,DAYS,0
3410 DATA WATKINS,OLSON,OLSON,1
3420 DATA WEBER,DONALDSON,OLSON,0
3430 DATA WEIGEL,OLSONGL,OLSON,0
3440 DATA WEISS,GEORGE,SCOTT,0
3450 DATA WHITE,BLECHMAN,BLECHMAN,0
3460 DATA WILKEN,OLSON,OLSON,1
3470 DATA WILLIAMS,OLSON,OLSON,0
3480 DATA WILLIAMS,DIXON,SCOTT,0
3490 DATA WILLIAMST,MARTIN,OLSON,1
3500 DATA WILSON,SHELLMAN,SCOTT,0
3510 DATA WITTMAN,ICKES,SCOTT,1
3520 DATA WOODBRIDGE,BLECHMAN,BLECHMAN,1
3530 DATA WRIGHT,MUELLER,PARRY,1
3540 DATA YANCEY,STODDARD,SCOTT,1
5000 DATA END,END,END,0
5100 CLS : PRINT : PRINT "      ONLY SOME OF THE DISTRIBUTORS IN THIS
5105 PRINT "ORGANIZATION ARE SHOWN IN THIS LIST TO ILLUSTRATE"
5110 PRINT "HOW THE PROGRAM WORKS. YOU'LL WANT TO PUT IN THE"
5115 PRINT "NAMES OF YOUR OWN DISTRIBUTORS. TO DO THIS:"
5120 PRINT "(1) TYPE 'DELETE 1000-3540' AND ENTER
5125 PRINT "(2) ENTER YOUR OWN DATA STATEMENTS, AS FOLLOWS:"
5130 PRINT "      DATA DISTRIBUTOR,SPONSOR,GROUP,0"
5135 PRINT "      (IF NOT RENEWED, USE 1 INSTEAD OF 0)"
5140 PRINT : PRINT "LEAVE 10 SPACES BETWEEN LINE NUMBERS FOR LATER NAMES,"
5145 PRINT "AND BE SURE LAST DATA STATEMENT IS: DATA END,END,END,0 ."
5150 PRINT : INPUT "PRESS ENTER TO CONTINUE.....";Z$
5155 RETURN
5200 CLS : PRINT : INPUT "DISTRIBUTOR'S LAST NAME";D$
5205 LPRINT : LPRINT "DISTRIBUTOR'S LAST NAME?";D$
5210 READ A$,B$,C$,R
5220 IF A$=D$ THEN GOTO 5250
5230 IF A$="END" THEN GOTO 5280
5240 GOTO 5210
5250 LPRINT TAB( 5)"DISTRIBUTOR"; TAB( 25)"SPONSOR"; TAB( 45)"GROUP"
5260 LPRINT TAB( 5)A$;: IF R=1 THEN LPRINT " *";
5265 LPRINT TAB( 25)B$; TAB( 45)C$
5270 GOTO 5285
5280 LPRINT : LPRINT "NOT ON LIST. SPELLED CORRECTLY??"
5285 RESTORE
5290 PRINT : PRINT : INPUT "ANOTHER? YES=1, NO=0";X
5295 IF X=1 THEN GOTO 5200
5296 GOTO 1000
5300 CLS : PRINT : INPUT "GROUP LEADER'S LAST NAME";G$

```



```

5302 LPRINT : LPRINT "GROUP LEADER'S LAST NAME?";G$
5305 C=1
5310 READ A$,B$,C$,R
5320 IF C$=G$ THEN GOTO 5360
5330 IF C$="END" THEN GOTO 5380
5340 GOTO 5310
5360 LPRINT A$;: IF R=1 THEN LPRINT " *",: ELSE LPRINT " ",
5365 C=C+1: IF C=5 THEN LPRINT :C=1
5370 GOTO 5310
5380 LPRINT C$
5385 RESTORE
5390 PRINT : PRINT : INPUT "ANOTHER? YES=1, NO=0";Y
5395 IF Y=1 THEN GOTO 5300
5396 GOTO 1000
5500 CLS : PRINT : PRINT "LISTING OF ALL DISTRIBUTORS IN PROCESS..."
5502 LPRINT : LPRINT "LISTING OF ALL DISTRIBUTORS:"
5505 C=1
5510 READ A$,B$,C$,R
5520 LPRINT A$;: IF R=1 THEN LPRINT " *",: ELSE LPRINT " ",
5530 IF A$="END" THEN RESTORE : GOTO 5540
5532 C=C+1: IF C=5 THEN LPRINT :C=1
5535 GOTO 5510
5540 PRINT : INPUT "AGAIN? YES=1,NO=0";W
5550 IF W=1 THEN GOTO 5500
5560 GOTO 1000
5700 CLS : PRINT : PRINT "NON-RENEWED DISTRIBUTORS BEING LISTED..."
5702 LPRINT : LPRINT TAB( 20)"NON-RENEWED DISTRIBUTORS!!"
5705 C=1: LPRINT
5710 READ A$,B$,C$,R
5720 IF R=1 THEN LPRINT A$,
5725 IF R=1 THEN C=C+1: IF C=5 THEN LPRINT :C=1
5730 IF A$="END" THEN LPRINT "END": RESTORE : GOTO 5750
5740 GOTO 5710
5750 PRINT : INPUT "AGAIN? YES=1, NO=0";U
5760 IF U=1 THEN GOTO 5700
5770 GOTO 1000
5900 L$=A$: RESTORE
5910 READ A$,B$,C$,R
5920 IF B$=L$ THEN LPRINT TAB( I)A$;: IF R=1 THEN LPRINT " *" : ELSE LPRINT "
"
5925 IF B$=L$ THEN GOTO 5910
5930 IF B$="END" THEN B$(A)=L$: RESTORE :I=0:A=0: GOTO 5630
5940 GOTO 5910

```

5

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Q. A couple of days ago I ran out of disk space while using WordStar. I tried to save the file on several other disks, but the program kept telling me that my disk was full. After a bitterly fought battle, I lost a page and a half of text. Is there anything I can do, other than watch my disk space constantly, to keep this from happening again?

Ric Parks
Spokane, WA

A. I too had this problem once and was able to solve it in the following manner:

Log onto the A: drive.
Insert a new (formatted) disk in drive B:.
Log onto drive B:.
Mark the top of your file with ^KB (Block Beginning).
Mark the bottom of your file with ^KK (Block End).
Do ^KW for a Block Write.
Answer the question "filename?" with B:filename.
After doing the Block Write, exit the file and re-edit it.

This is the way I was able to save two pages of text that WordStar would not let me save otherwise. You should not have to watch disk space too closely, just keep in mind that each average page of text takes about 2K of space.

Q. I would like to know if there is an affordable COBOL compiler for the MBC-555 using MS-DOS 1.25? Also, I am thinking about buying an ink jet printer, the Hewlett-Packard or the Olivetti. Is there any difference in using this type of printer as opposed to a dot matrix like the Epson RX-80? Will WordStar and the other MicroPro software work with the ink jet printers?

Brian Singleton
Springfield, IL

A. The only COBOL compiler that I have been able to find out about that will run on the Sanyo MBC-550 series is a product called Nevada Cobol. At the present time we do not know of a source for this product.

The Hewlett-Packard ink jet printer will function with all of the software that comes with the Sanyo. This printer can be configured to emulate an Epson printer by setting a DIP switch. There are some pitfalls to this printer which should be considered. It will not print multiple copies (carbons), you cannot use mailing labels, tractor mechanisms are not available, and it does not do Epson graphics. It would be excellent for text such as letters and reports, but not very good for listings and such. As an all-around printer, it would not be a wise choice.

Q. Do you have any information available as to how to configure the Juki 1600 daisy wheel printer for WordStar and EasyWriter? Also, how do you adjust the page length with WordStar and EasyWriter? A friend and I are having trouble with this.

Harold Lehrer
New York, NY

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A. The Juki 1600 printer emulates a Diablo/Xerox 1610/1620 printer. If you install *WordStar* or *EasyWriter I* in this way you should not have any problems.

Regarding setting page lengths correctly with *EasyWriter I*, please refer to pages 12-8 to 12-9 in the manual where it is clearly defined. *WordStar* works much the same, and is very easy. If you would like to elaborate on your difficulties, I will be happy to try to help.

Q. When will you be publishing a list of software that is compatible with the MBC-550 series. Also, has anybody discovered further documentation for CalcStar and InfoStar?

Don Nissen
Manhattan, KS

A. Sanyo has published a list about eight pages long of software that will run on the MBC-550 series. If you cannot obtain a copy from your dealer, you should write to Sanyo in New Jersey and request the list.

There is an extensive volume on *InfoStar* called *ReportStar Reference Manual* which is also available from your Sanyo dealer. This manual should answer all of your questions.

Regarding *CalcStar*, you should not need additional documentation as Sanyo furnished the complete MicroPro manual.

Q. Can you tell me how to install ReportStar so that I can use the compressed characters (132 columns) option on my Okidata 82A printer? I use two printers: a dot matrix

for long runs of data and a daisy wheel for show. I have tried everything, but cannot do what I want other than loading BASIC and doing an LPRINT CHR\$(29). There must be an easier way.

Sally Mitchell
Philadelphia, PA

A. We do not know of any way to change *ReportStar* to output other than daisy wheel printer codes. There is no mention of how to make this change in the *ReportStar* reference manual from MicroPro. The following may be an acceptable alternative to your problem.

From the MS-DOS 2.11 prompt you can change to condensed print by typing the following in capital letters only.

COPY CON: PRN:
^J^Z

and press RETURN
and press RETURN

This is accomplished as follows:

^J by holding the CONTROL key, then press the 'J' key.
^Z by holding the CONTROL key, then press the 'Z' key.
Now press the RETURN key.

All of the above must be done with the printer turned on and online ready to print. The above sequence should work with your Okidata printer as well as substituting other codes for expanded print, etc. Experiment; remember, you can't hurt your computer from the keyboard. The "^J" is equivalent to LPRINT CHR\$(29) from BASIC. The ^Z is the end-of-file marker for DOS and will be the same no matter what function or codes you try to use. This must be done every time you want compressed print.

After spending a couple of hours "playing," I have come

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up with another solution which you may like better because it will be automatic everytime you boot the disk. Type the following just as shown using all capital letters.

COPY CON: AUTOEXEC.BAT
COPY NARROW.SU PRN: ^Z

press RETURN
press RETURN

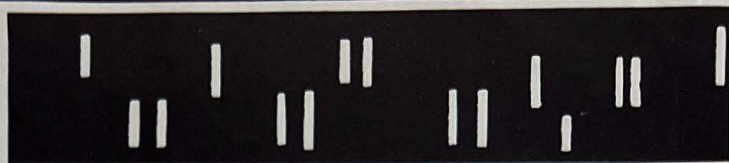
Now for the second half.

COPY CON: NARROW.SU
^J REPORT.COM ^Z

press RETURN
press RETURN

The first line creates a file called AUTOEXEC.BAT which the computer will automatically run on every reboot of the system. The time and date will not be asked for. The second line tells the computer to send the file NARROW.SU to the printer. The third line creates the file to be sent to the printer to turn on compressed print. Line four sends the equivalent of LPRINT CHR\$(29) to the printer as well as executes the program ReportStar. REPORT.COM can be the name of any program, so you could do the same thing to your CalcStar disk for compressed print.

Q. My Juki 6100 does not reverse multi-strike ribbons when they end, and the indicator light on the front panel does not light at such times. If I manually move the ribbon tension guide to the right, the light will still not light, nor will the ribbon reverse. The light functions properly at other



times. Is there a way to correct this, or can I manually cause the ribbon to reverse?

Alan Lipschitz, M.D.
New York, NY

A. The key to your problem is multi-strike ribbons. You are trying to use multi-strike ribbons as multi-pass ribbons. The only ribbons that will reverse and print in the opposite direction are nylon cloth multi-pass ribbons. If you will remove a multi-strike ribbon that has just been used to print you will see that the characters typed cannot be read. This is because the printer only moves the ribbon a fraction of the distance of the width of the printed character.

Multi-strike ribbons should not be rewound, as the printing would not be satisfactory.

Q. I have a question about the memory test (MTEST.COM) utility available for DOS 2.11. I tried it out, but it seems as though the test would take forever to complete. Just how long would it take to run the entire test, and is there much point in using it at all?

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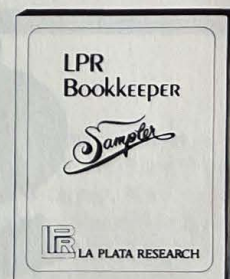
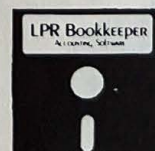
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A. Regarding the memory test program MTEST.COM, this program will run forever unless you stop it or the power fails. After one or two passes without an error report you should abort the program and consider everything normal. The only use of the test would be if you are having scrambled text or data and you suspect a memory problem. Other than that the test is nice to have, but not of any particular value.

Q. How can I do the following things with WordStar: Create a file normally on the screen, but have it printed double-spaced? Also, I would like to place page numbers in the extreme top right side of a page.

Efrain Rosa
Liverpool, NY

A. The only way I can find to print a blank line between each line of text with a dot matrix printer would be as follows. Enter your entire document, then return to the top of the file and use the ^OS Set Line Spacing command. This will allow you to enter the text in the normal mode, then print it double-spaced or with up to nine spaces between each line.

If you were using a daisy wheel printer you could use the dot command ".LH16"; this does not show on the screen but prints double-spaced text. Unfortunately, dot matrix printers do not honor this command.

You can put page numbers on the top right side of pages by using dot commands as shown below.

.HE

PAGE #

.OP

The ".HE" is the three-line "header margin" at the top of each page. After inserting this command, tab over to the last standard tab position (56) and type "PAGE #." This will print the word PAGE and the correct number on each page as it is printed. Make sure that you also include the ".OP" dot command or you will also have the page number printed in the footer margin in the center of the page bottom. If you do not want the word PAGE printed, just put the "#" wherever you want it.

Q. How does the Okidata 82A differ from the Okidata 84? I am using EasyWriter set up for the Okidata 84 printer by menu choice 13. It works quite well, but some odd things happen at times. After printing any text using EasyWriter's 'P' command, the printer stays in the Near Letter Quality (NLQ) mode. Even after going to DOS and doing a screen dump, I still do not get draft quality back. If I had enough information I would attempt to change the printer file utility program myself. Can you help?

Jack A. Moore
Birmingham, AL

A. The reason that everything is being printed in NLQ mode is because EasyWriter is not resetting the printer to the standard print mode. I do not have manuals on all printers, so I cannot answer your question about the

differences between the Okidata 82A and 84 printers. Possibly you could get your dealer to let you photocopy the control code and sequences for comparison. Then you should be able to change the printer file utility program to suit your needs.

Q. I have a Panasonic KX-P1090 printer and I cannot get it to super/subscript, nor will it do double spacing. I have tried my dealer, Sanyo and Panasonic and can't find anyone who can solve my problems. I have tried every possible combination of codes and cannot get the proper results. The only thing that keeps me going is that you said it will work.

James C. Duchon
Chicago, IL

A. Please try the following and see if it will solve your problem with super/subscript. This information was furnished to another Panasonic printer owner and I have not had a comment if it did or did not work, but it should.

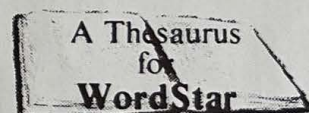
It will only take three codes to turn on super- or subscript and two codes to turn each off. Please see the following:

Function		Hex Code	Control Function
Superscript	ON	1B 53 0	^PQ
	OFF	1B 54	^PW
Subscript	ON	1B 53 1	^PE
	OFF	1B 54	^PR

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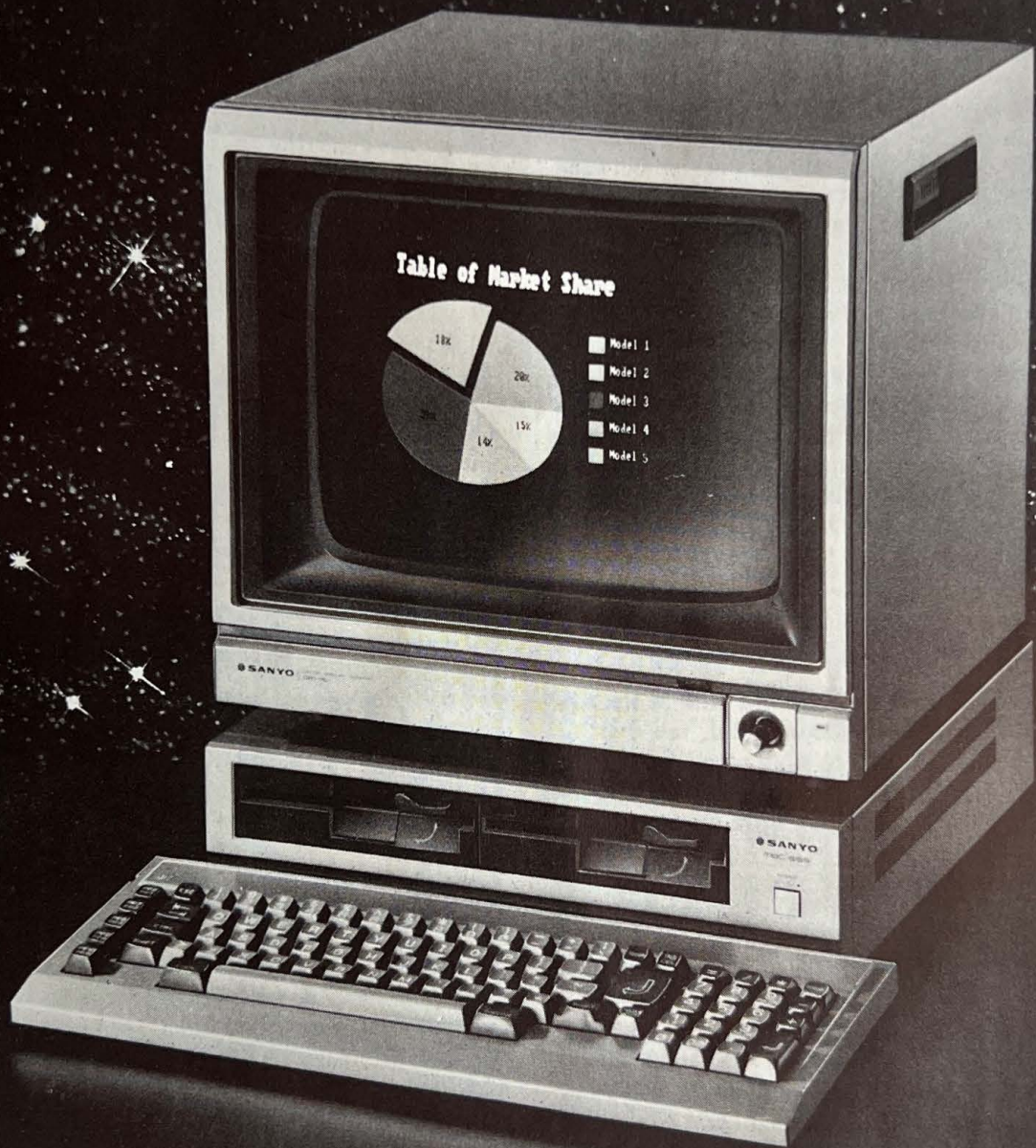
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The *WordStar* article can be applied to your situation. What you will have to do is substitute the above codes for the codes shown in the original article under User Defined Functions. Please let me know if this solves your problem.

To print double-spaced text from *WordStar*, see the answer above. Enter your entire document, then return to the top of the file and use the "^OS" Set Line Spacing command. This will allow you to enter the text in the normal mode, then print it double-spaced or with up to nine spaces between each line.

Q. *I have a Sanyo MBC-550 computer that I upgraded to 256K RAM, two DS/DD disk drives, MS-DOS 2.11 and a Panasonic KX-P1091 printer. I am having a problem with WordStar, CalcStar and EasyWriter when I send output to the printer. All of the programs will print extra characters, drop characters and offset lines — all at random places and not the same each time the same file is printed. When I asked my dealer about the problem, he said that he has heard of the same problem with other Sanyo/KX-P1091 owners.*

Howard Miller
Roanoke, VA

A. I have used a Panasonic KX-P1091 printer in the past and never had any of the problems that you describe. It does not sound like a computer problem, but one with the printer. The most likely suspect would be the internal buffer which may have one or more bad bits in RAM. I would take the printer back to your dealer or to a Panasonic service center and have them do a complete check of the unit.

If you would like to try something else before doing this, you might borrow a printer from a friend and see if you still have problems. Possibly before you send your printer in for repair you might test the RAM that you installed. Use MTEST.COM that comes on the Sanyo 550/555 utility disk. If you find what might be an error, switch both sets of RAM that you installed and see if the error moves to a different location. If it does, then replace the chip and your problems should be over.

Q. *Using FormGen, I have created a very satisfactory form for keeping genealogy records, specifically family sheets. I assigned four key fields: husband's family name, wife's family name, and the place of birth of both. Being satisfied with the form, I went to DataStar and entered a great amount of data, creating about 50 family records with hundreds of bits of information.*

At this time I realized that I should have created one more key field; specifically, the number of the particular family sheet. I could then have numbered each sheet as I filled it, written an index by number and name, and used that index to recall a specific family sheet from memory.

How do I now add a new key field to the existing chained form?

I can, of course, start all over again, recreating my form with the number key field in it. That solution will require me to reenter all my family data which, obviously, I would prefer not to do.

Walter E. Mather
Virginia Beach, VA

A. The fastest way to add a brand new key field is: Start with *FormGen* and revise your old form to include the new field, rearranging the levels of key fields. Give the new form a temporary new name until the whole process of changing your data file is complete and take careful note of the placement of your new field.

Next use *WordStar* to edit your data file. Use the non-document mode. Each record of your data file will appear as a single line on the screen. Carefully space over and insert a comma in each record where the new field should be located. If you already know how you intend to number the family sheets and are able to tell which record you are numbering while in *WordStar*, you could also number them while you are editing. If it is too difficult to identify the records at this time, you can number them in *DataStar* later. *Be sure you are editing a backup copy in case a mistake is made.* Now save the file under a new name to match the new form name.

In case it was necessary to number the records in *DataStar*, here is the method to use. At this point your index still does not match your data file. Invoke *DataStar* with the new form name. Use 'D' to scan in data order. The data should be pulled into the mask in the correct

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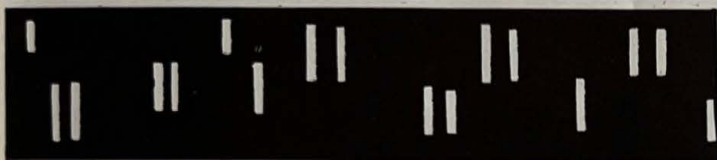
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positions with the new added field being blank. Enter whatever number system you want in the blank field and save the revised record.

No matter which method you used to number the records, when you have worked your way through the data file (please stop for backups occasionally), sort the file with *FormSort*. *FormSort* will write a new index to match the new data file. When the whole operation is complete and you are satisfied that everything is correct, it is time to erase the old form and data file and rename the new one anything you like.

Q. *I had visions of using InfoStar to automate my bibliography and specimen records (I'm an entomologist), but InfoStar has me stumped. Perhaps I'm expecting too much.*

For my bibliographic purposes, I need to design a form that will handle from one to, say, six authors, and titles



that sometimes exceed the 255 character field limit. I've already decided that I'll need to have a separate record for each publication, although I'd really like to have a single record for each author that includes all his

publications. However, the number of publications per author ranges from one to more than 30.

Specimen records present a similar problem. One species may be represented by a single collection record or a hundred. I'd like to be able to sort collection localities both within species and among species, such as listing all species that have been collected in Florida or all the localities (in alphabetical order) where a particular species has been collected. Should I use a separate record for each locality and create separate files for each species? Right now I'm dealing with about 80 species, but eventually this could grow to more than 1,000.

*M.C. Thomas
Gainesville, FL*

A. The projects you have in mind are not really as complicated as you might think. You're not expecting too much from your computer or your program, but you are expecting too much from yourself. Keep things simple and let the computer do the work.

For instance, a record for your bibliography should have the smallest number of fields possible to contain the information you need. Don't design a form to handle six authors, and don't try to put all of an author's publications in a single record. Instead, design a form that contains the following:

- 1) The author's name — perhaps two fields for this, last name and first name or initials.
- 2) The name of the article — if titles exceed 255 characters, set up two fields or more for a single title

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and continue from one to the other to enter the complete title.

- 3) The name of the publication the article appears in.
- 4) The volume number or perhaps the date of the publication or a field for each.
- 5) The page numbers in the publication.
- 6) The publisher — if the item is a book instead of a journal or magazine.
- 7) A short comment on the contents of the article.

If you need any other information relative to a single article, include a field in the record for it, but don't include more than one article. If you do, you will be doing the computer's work.

The next step (besides entering data in the above form) is to design a report form to pull all this information together. You can sort the above information in more than one way depending on the result you want. By making more than one key field in your data mask, you can design



a report that will print a list sorted first by author (alphabetically by last name, identical last names resorted alphabetically by first name or initial), perhaps second by name of publication, third by title of article or maybe by topic. If you would rather have a chronological list of the author's publications, make the date of publication the second key field instead of the name of the publication. The trick to all this, if you want to call it a trick, is that by keeping the "record" in your data file to its simplest form, you build in versatility. You will always be able to change your mind about the final result without having to enter all that data over again.

Rather than investing in a dedicated bibliography program, you may want to order the *DataStar* and *ReportStar Reference Manuals* from your computer dealer. They contain a much more complete explanation of the capabilities of *InfoStar*.

To generate a specimen record like the sample you sent me, I would set up a form to contain fields for the following information: scientific name, number, county, locality, date, collector, and host. The first key field would be the scientific name; the second key field would be the county and the third key field the locality.

Start simply. Visualize what you need and build toward it. If you design the data form first, you can be entering data while you learn to design the report.



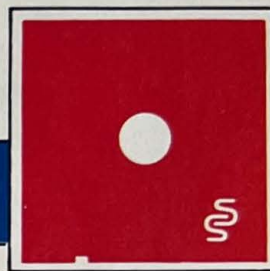
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Sidekick on the MBC-550/555



VIDEO RAM
BOARD
REQUIRED

By
Mark Zeiger

The Video Board for the MBC-550 series computer has made this machine much more IBM PC compatible. Since this board locates the video RAM at the same address as the IBM color display adapter and has the same port addresses as the IBM, many graphics programs that run on the IBM will now work on the Sanyo. However, programs that directly poll other IBM hardware functions might not work on the MBC-550/555. One of these programs is Microsoft's *Flight Simulator*; another is Borland International's *Sidekick*. Thanks to the efforts of Tim Purves, the *Flight Simulator* problem has now been solved. This article

explains how to use *Sidekick* on the MBC-550/555 with a Video Board.

Sidekick checks the status of the IBM shift keys in order to activate itself. (The shift keys in this case are the left and right SHIFT keys and the ALT, CTRL, NUM LOCK, SCROLL LOCK, CAPS LOCK, and INS keys). If any of these keys are pressed, a certain bit is set in location 417 Hex in segment 0. For instance, if the right SHIFT key is pressed, bit 0 is set until the key is released. The left SHIFT key sets bit 1 of location 417H, the CONTROL key sets bit 3, and the ALT key sets bit 4. After *Sidekick* is installed, it checks the status of the shift keys during each timer interrupt

(INT 9). It checks this location for either a 0C Hex (CTRL and ALT key pressed) or a 3 (left and right SHIFT keys pressed) and activates *Sidekick* if either of these keys are pressed.

Since the Sanyo MBC-550/555 does not perform in this manner, a method had to be found to emulate what the IBM PC does. The plan is very simple: steal the keyboard interrupt and check for a certain key code. If the key code is present, store a 0C Hex in location 0:417H; if any other key combination is pressed, store a 0 in this location. The key combination I chose was the "forward slash" (/) with the GRAPH key activated (this returns a scan code of 0D2H on the Sanyo). Since the source code is provided in this article, it may be changed to any key combination you

(Mark Zeiger is the research and development manager for the computer division of Sanyo Business Systems Corp. His expertise with assembly language programming and the MBC-550 series is well established.)

wish. I chose this particular set of keys because they are so close to each other.

If you look carefully at the source code, you will see that I also change location 0A6AH in the segment that *Sidekick* resides in. This is because the version I have actually checks this location rather than 0:417H. I am not sure how *Sidekick* copies memory location 0:417H into 0A6A, but this is what happens in version 1.11C. The other version I checked (version 1.10B) actually does look at 0:417H. If anybody has the time to take apart the code, I'm sure we would all like to know how 0:417H gets copied into CS:0A6A.

To find out where *Sidekick* resides in memory, just load in the program and then use DEBUG to examine location 0:0022H. This is the vector for INT 9 and it is patched to point to *Sidekick* rather than to the DOS timer interrupt.

To use the program, just load in *Sidekick* and then the patch (which I call SKGO). You must make sure to load them in the order specified or you will crash the system. *Sidekick* will then work as normal except that the dial routine will not work.

If you do not have an assembler, you may obtain the Video Board System Utility Disk from Sanyo. This disk also

contains an updated BIOS (the bell problem has been fixed) and a few other utilities. To get the disk, send a certified check or money order for \$15 to cover the cost of the media and postage to:

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My thanks to Alan Konkal of Deltona, Fla., for giving me the hint that got me started in solving this problem.

The listing: SKGO.COM

```
; Sidekick keyboard patch for the MBC-550 with the Video Board

; Create 02-04-85 by Mark Zeiger for Sanyo Business Systems Corp.
; Permission is granted to use, modify, and/or place in the Public
; Domain, but not to sell this program.

; Version as of 02-05-85

; This patch for Sidekick has only been tested for Version 1.11C
; and 1.10B (non copy protected). Code has been put in for other versions,
; but I do not know if this code will work. Hints on how to re-
; write this patch are given below, but they are not for the
; "faint-of-heart" and require knowledge of assembly language
; programming.
;
; USAGE:  You must FIRST install Sidekick.
;         Then install SKGO.
;         If you run the programs in reverse order, you will
;         crash the system.
;
; HINT:   Create a BATCH file with the following commands:
;
;         SK          (the Borland Sidekick program)
;         SKGO        (this program)
;
;         Then to activate Sidekick, press the GRAPHICS key
;         followed by the / key. When Sidekick is activated,
;         you may toggle off the GRAPHICS key to resume normal
;         keyboard operation in Sidekick. All other Sidekick
;         commands act as normal as far as I can tell.
;
; NOTE:   The DIALER can not be used.
;
; WARNING: Since this routine uses the same procedure as the
;          screen dump programs supplied by SANYO, the screen
;          dump and this patch may not be installed at the same
;          time. To do so will cause the system to crash.
;
;          This program will remain resident in memory and intercept
;          the keyboard interrupt routine to check when the "/" key
;          is pressed when the "GRAPHICS" key is down. Sidekick will
;          be activated by patching a certain memory location that
;          Sidekick checks during each timer interrupt. When any other
```


key is pressed, this memory location is changed to 0. This way Sidekick will not be constantly activated.

If the patch does not work with your version of Sidekick, you might try the following:

1. Load Sidekick
2. Use DEBUG to look at 0000:0020 to 0000:0023 (all values in HEX).
3. Disassemble the code that this location points to. (i.e. if the values are aa bb cc dd at this location, start the disassembly at ddcc:bbaa using DEBUG's "U" command Uddcc:bbaa).
4. You should see a segment of code similar to the following:

```
MOV AL,[XXXX]
AND AL,0F
CMP AL,0C
JZ  YYYY
CMP AL,03
JZ  YYYY
```

XXXX is the address that must be patched by SKGO.

```
0000      cseg      segment
0100      org      100h
= 00D2      sk_key      equ      0d2h      ; / key with GRAPH depressed
                        assume cs:cseg,ds:cseg
0100 EB 33 90      start:      jmp      install
                                ;first do original keyboard int
0103 CD F7      skgo:  int      247
0105 50          push      ax
0106 53          push      bx
0107 06          push      es
0108 1E          push      ds
0109 B3 00      mov      bl,0
010B B4 01      mov      ah,1
010D CD 16      int      16h
010F 3C D2      cmp      al,sk_key
0111 75 02      jne      nosk
0113 B3 0C      mov      bl,0ch
0115 33 C0      nosk:  xor      ax,ax
0117 8E C0      mov      es,ax
0119 26: 8E 1E 0022      mov      ds,es:word ptr [22h]
011E 88 1E 0A6A      mov      byte ptr ds:[0a6ah],bl
                                ;get code segment of sk pgm
                                ;move sk flag to internal location..
                                ;...that sk (vers 1.11C) checks
0122          NON11C:
0122 26: 88 1E 0417      mov      byte ptr es:[0417h],bl
                                ;move sk flag to location that..
                                ;..other versions might check.
                                ;This is an absolute location.
0127 80 FB 00      cmp      bl,0
012A 74 04          je      noempty
012C B4 00          mov      ah,0
012E CD 16          int      16h
                                ;if sk request, then empty..
                                ;..keyboard buffer
0130          noempty:
```



```

Ø130 1F          pop    ds
Ø131 07          pop    es
Ø132 5B          pop    bx
Ø133 58          pop    ax
Ø134 CF          ired

```

```

;   This procedure installs the SK patch. It first takes the
;   pointer to the keyboard interrupt routine and places it
;   in interrupt vector 247 (vector 248 is the first used by
;   the MBC-550's hardware). It then patches the keyboard
;   interrupt vector to point to the SK patch routine. Finally
;   it performs an MS-DOS exit and stay resident call.

```

Ø135 install:

```

Ø135 FA          cli
Ø136 33 C0        xor    ax,ax           ;zero AX
Ø138 8E C0        mov    es,ax
Ø13A 26: A1 03EC  mov    ax,es:[251*4]   ;patch int 251 IP into int 247
Ø13E 3D 0103 R    cmp    ax,offset skgo  ;attempt to see if skgo already in
Ø141 74 1E        je     alreadyinst
Ø143 26: A3 03DC  mov    es:[247*4],ax   ;move INT 251 IP to INT 247 IP
Ø147 26: A1 03EE  mov    ax,es:[251*4+2] ;patch code segment of INT 251..
Ø14B 26: A3 03DE  mov    es:[247*4+2],ax ;..to CS of INT 247

Ø14F 26: 8C 0E 03EE mov    es:[251*4+2],cs ;now make keyboard int point to..
Ø154 B8 0103 R    mov    ax,offset skgo  ;..this programs keytest
Ø157 26: A3 03EC  mov    es:[251*4],ax
Ø15B BA 0136 R    mov    dx,offset install+1 ;prepare for exit and stay resident
Ø15E FB          sti
Ø15F CD 27        int    27h

```

Ø161 alreadyinst:

```

Ø161 BA 016C R    mov    dx,offset instmsg
Ø164 B4 09        mov    ah,9
Ø166 CD 21        int    21h
Ø168 B4 00        mov    ah,0
Ø16A CD 21        int    21h

```

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Ø16C instmsg db Ødh,Øah,"Sidekick patch already installed",Ødh,Øah,7,"\$"

Ø192 cseg ends

end start

Segments and groups:

Name	Size	align	combine	class
CSEG	Ø192	PARA	NONE	

Symbols:

Name	Type	Value	Attr
ALREADYINST.	L NEAR	Ø161	CSEG
INSTALL.	L NEAR	Ø135	CSEG
INSTMSG.	L BYTE	Ø16C	CSEG
NOEMPTY.	L NEAR	Ø13Ø	CSEG
NON11C	L NEAR	Ø122	CSEG
NOSK	L NEAR	Ø115	CSEG
SKGO	L NEAR	Ø1Ø3	CSEG
START.	L NEAR	Ø1ØØ	CSEG

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Seeding The Pseudorandom Number Generator

I was quite surprised, when I bought my Sanyo, that the pseudorandom number generator had to be manually seeded. My TRS-80 Model I used the refresh register to seed itself while my Color Computer allows the user to seed it from an internal timer.

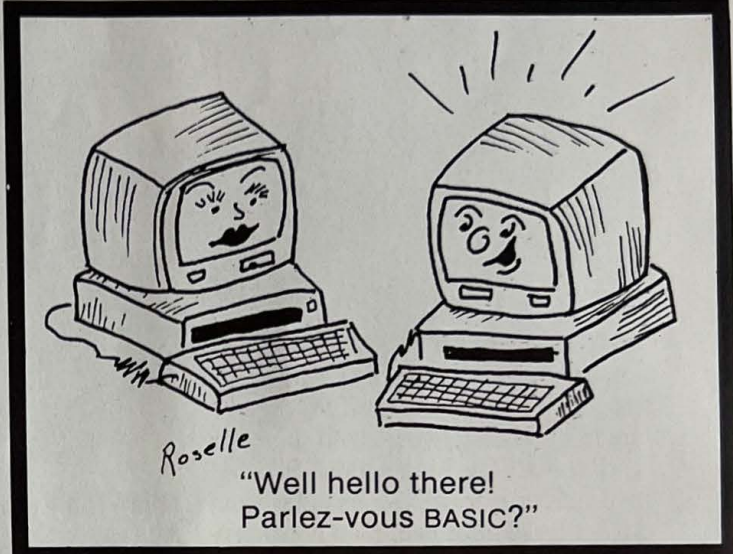
Everytime the computer asks me for a seed number (between -32728 and 32767), I manage to put in something original like 12345 or 4321. I have the distinct feeling that I am always playing the same routine over and over. I looked into the owner's manual and found a reference on Page 5-33 to a 8253 timer chip. There are three timers on that chip and I now use two of them to seed my random number generator using the following routine:

```
10000 R=INP(32):R1=INP(34):R=256*R1-32768
10010 R1=INP(34)
10020 RANDOMIZE (R)
10030 RETURN
```

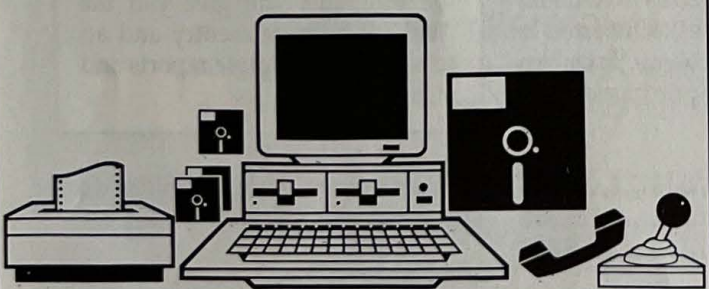
I use the timer at input port 32 as the least significant byte and the timer at port 34 as the most significant byte to generate a number between zero and 65535. I then

subtract 32768 to get the negative seed possibilities. While this is not totally random, the timers move fast enough so that a wide variety of seeds are introduced (more than if I do it manually).
The purpose for statement 10010 is to reset the blinking cursor. If you input from port 34 an odd number of times, your blinking cursor disappears (I haven't a clue as to why, but it is a useful fact in displays where you don't want a cursor). If you input from port 34 an even number of times, it reappears.

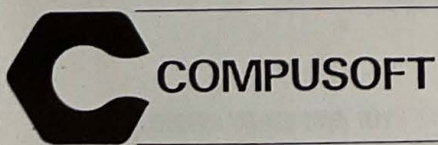
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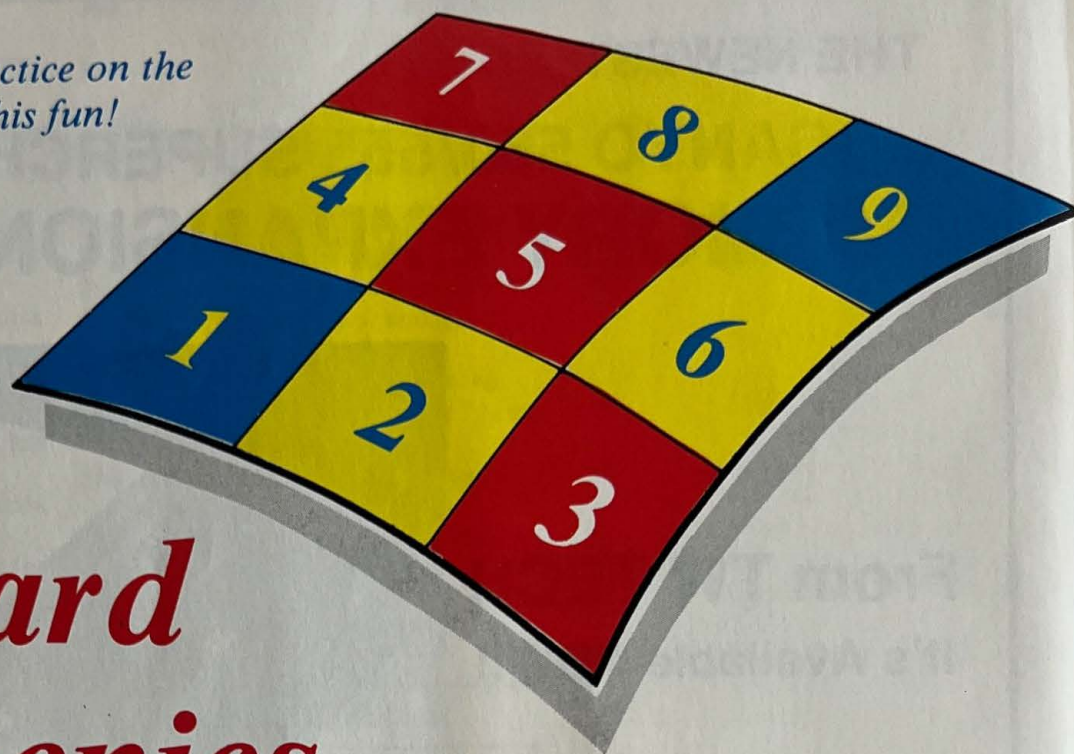


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It's hard to believe that practice on the numeric keypad could be this fun!



Keyboard Calisthenics With Reflex 9

By J. Weaver Jr.

A great deal of a computer's work involves numbers, whether it be screen locations, DATA statements for POKEd routines, or the family budget in *CalcStar*. Unfortunately, *somebody* has got to type all those numbers in — probably you. Even if you can touch-type rapidly, the numeric keypad is still the fastest and easiest way to enter large quantities of numbers. Most people, however, are not as familiar with the layout and use of the numeric pad as they are with the main keyboard itself. All that's needed is a little practice, and if the practice is cleverly disguised as a competitive game, you may not even realize how much you're learning (until the next time you boot up *CalcStar*, anyway).

Reflex9 is a BASIC game designed to improve your speed and accuracy on the numeric keypad, as well as test your reflexes and amaze your friends. When the game starts, you will see nine boxes on the screen labeled one through nine, corresponding to the upper nine keys of the numeric pad — press any of them to start the game.

When you hear a beep from the Sanyo's speaker, get on your mark: after a short, random delay, one of the nine boxes will turn red and an internal timer will start counting backwards from 100. Press the numeric key corresponding to the red box as fast as you can to stop the timer and score that number of points. Pressing the wrong key, or waiting too long, will result in a score of zero for that box.

After another beep, a second box will turn red, and so on until all nine keys have been used. At this point, the box with the lowest score will turn yellow, and after three beeps, will turn red, and the score on this retry will be doubled to make your final score. The best score for each *Reflex9* session is displayed on the screen, and the top ten scores of all time are saved to a disk file with the high scorer's name.

To use *Reflex9*, type in the program from Listing 1. Explanations of the program's routines and variable assignments are given below. After entering and saving the program, just type RUN to start the game. To be sure that the

NUM LOCK toggle is set to "numeric" instead of "cursor control," use the keys on the numeric pad to start the game. If nothing happens, press NUM LOCK once and try again. If you're using *Reflex9* as a "typing tutor" for the numeric pad, try entering one or two initials and the date for your high scores, so that you can gauge your progress in learning the numeric pad.

(J. Weaver Jr. is a free-lance computer programmer, consultant and author. His recent works for the Sanyo 550 series include *Mi-Term*, *Solitaire*, *Maz* and *Cornerman*. He is also the National Recording Secretary of CHART [Computer Hobbyists Against Raiders and Thieves], a national organization dedicated to the legal and ethical use of computer technology. He can be reached through CompuServe [71446,1362], MCI Mail [FactProg], or at WH Enterprises, 859 Winston, Monroe, MI 40161; 313-241-WHWH.)

Reflex9 Routines					
		200	Compare final score to daily best and update	X	X screen position of boxes
		210	Compare final score to all-time best	Y	Y screen position of boxes
10-30	Title, copyright notice				
40	Set up arrays and variable types, reset random	220-250	Input player's name	Variables: A Round number (1 to 10), general use B Random number for box order swap (1 to 9) BL Box number with lowest score (0 to 9) C Title box size factor CO Color code (0 to 7) HI Daily high score I INKEY\$ variable (string) II High scorer's name (string) J Box number (1 to 9) P Pointer to high score table (1 to 10) SC Score countdown timer (0 to 100) SL Score in box with lowest score (0 to 100) ST Total score (0 to 1000) V Value of key pressed (0 to 9) WT Delay loop variable X X screen position (0 to 639) Y Y screen position (0 to 199)	
50, 60	Print titles	260	Print name, write records to disk		
70	Print score headings	270	Fill box with color, print key number in box		
80	Print boxes, initialize array values	280	Print score centered in box		
90	Read high scores from disk (if any)	290, 300	Print names and numbers for "top ten" listing		
100, 110	Wait for keypress to start game	310	Clear "your score" area		
120	Clear boxes of numbers left from previous game	320	Clear "your score" area, print total score		
130	Shuffle 'O' array (determines order of boxes)	330	Clear one line of "top ten" list		
140	Send BEEP, correct score for 10th round	340	Open disk file for records, set up field		
150	Random delay, change box color, check for false starts				
160	Wait for keypress, decrement timer, paint box border				
170	Display score and "double" in box, update total				
180	Erase box border				
190	Print total score, loop for next box				
		Reflex9 Variables			
		Arrays:			
		I	High scorer's names (string)	WT	Delay loop variable
		O	Order of box usage	X	X screen position (0 to 639)
		S	High scores	Y	Y screen position (0 to 199)

The listing: REFLEX9.BAS

```

10 ' REFLEX9.BAS - written by J. Weaver Jr.
20 ' Copyright (c) 1984 by Factory Programming
30 ' Permission granted for personal use only
40 CLS:DEFINT A-Z:DEFSTR I:DIM X(9),Y(9),O(10),I(11),S(11):LOCATE 1,1,0:RANDOMIZ
E VAL(RIGHT$(TIME$,2))
50 FOR CO=1 TO 7:C=8-CO:LINE(480-C*4,144-C*2)-(589+C*4,157+C*2),CO,BF:NEXT:SYMBOL(480,144),"REFLEX9",2,2,0,0
60 SYMBOL(448,184),"(c) 1984 by",2,1,6,0:SYMBOL(432,192),"J. Weaver Jr.",2,1,6,0
70 SYMBOL(496,0),"YOUR SCORE",1,1,3,0:SYMBOL(488,62),"TODAY'S HIGH",1,1,3,0:SYMBOL(484,108),"ALL TIME BEST",1,1,3,0
80 FOR Y=132 TO 0 STEP -66:FOR X=0 TO 264 STEP 132:LINE(X,Y)-(X+132,Y+66),7,B:LINE(X+8,Y+4)-(X+124,Y+62),7,B:NEXT X,Y:CO=0:FOR J=1 TO 9:O(J)=J:READ X(J),Y(J):GOSUB 270:NEXT:DATA 9,137,141,137,273,137,9,71,141,71,273,71,9,5,141,5,273,5
90 GOSUB 340:IF LOF(1)=0 THEN PUT #1,1:CLOSE ELSE GET #1,1:FOR A=1 TO 10:I(A)=II(A):S(A)=VAL(IS(A)):NEXT:CLOSE:FOR A=1 TO 10:GOSUB 300:NEXT
100 C0=-1:A=-1:I=INKEY$
110 I=INKEY$:IF I<"1" OR I>"9" THEN A=(A+1)MOD 21:CO=(CO+1-SGN(A))MOD 7:SYMBOL(408,A*8+16),MID$("PRESS ANY NUMERIC KEY",A+1,1),2,1,CO+1,0:GOTO 110
120 LINE(408,0)-(423,199),0,BF:IF BL>0 THEN CO=0:FOR J=1 TO 9:GOSUB 270:SYMBOL(X(J)+44,Y(J)+14),CHR$(J+48),4,4,2,0:NEXT:GOSUB 310
130 FOR A=1 TO 9:B=(RND(1)*9)MOD 9+1:SWAP O(A),O(B):NEXT
140 FOR A=1 TO 10:IF A=10 THEN J=BL:CO=6:GOSUB 270:ST=ST-SL:GOSUB 320:BEEP:FOR W=1 TO 200:NEXT:BEEP:FOR WT=1 TO 200:NEXT:BEEP:O(A)=J ELSE BEEP
150 FOR WT=1 TO ((RND(1)*17)MOD 17+3)*100:NEXT:J=O(A):CO=4:SC=100:I=INKEY$:GOSUB 270:IF INKEY$>" " THEN SC=1

```



```

160 V=VAL(INKEY$):IF V=0 THEN SC=SC-1:ON SGN(SC)+1 GOTO 170,160 ELSE PAINT(X(V)-
8,Y(V)-4),4,7:IF V<>J THEN SC=0
170 CO=1:GOSUB 270:S=SC:GOSUB 280:ST=ST+SC:IF A=1 THEN SL=SC:BL=J:ST=SC ELSE IF
A=10 THEN ST=ST+SC:SYMBOL(X(J)+35,Y(J)+5),"DOUBLE",1,1,3,0:SYMBOL(X(J)+35,Y(J)+4
4),"DOUBLE",1,1,3,0 ELSE IF SC<SL THEN SL=SC:BL=J
180 IF V>0 THEN PAINT(X(V)-8,Y(V)-4),0,7
190 GOSUB 320:NEXT
200 CO=0:FOR WT=1 TO 2000:NEXT:IF ST>HI THEN HI=ST:LINE(480,74)-(600,98),0,BF:SY
MBOL(520-LEN(STR$(HI))*20,74),STR$(HI),5,3,2,0
210 S(11)=ST:I(11)="" :FOR P=11 TO 2 STEP -1:IF S(P)>S(P-1) THEN SWAP S(P),S(P-1)
:SWAP I(P),I(P-1):GOSUB 290:NEXT
220 IF P=11 THEN 100 ELSE X=0:Y=P*8+112:II="" :I=INKEY$
230 SYMBOL(X+432,Y),"_",2,1,6,0
240 I=INKEY$:IF I=CHR$(13) THEN 260 ELSE IF I=CHR$(8) AND II>"" THEN II=LEFT$(II,
LEN(II)-1):GOSUB 330:X=X-16:GOSUB 330:GOTO 230 ELSE IF I<" "OR I>"z" OR X=128 TH
EN 240
250 GOSUB 330:SYMBOL(X+432,Y),I,2,1,6,0:II=II+I:X=X+16:GOTO 230
260 I(P)=II:A=P:GOSUB 300:GOSUB 340:GET #1,1:FOR A=1 TO 10:LSET II(A)=I(A):LSET
IS(A)=STR$(S(A)):NEXT:PUT #1,1:CLOSE:GOTO 100
270 LINE(X(J),Y(J))-(X(J)+114,Y(J)+56),CO,BF:IF CO>0 THEN RETURN ELSE SYMBOL(X(J)
+44,Y(J)+14),CHR$(J+48),4,4,2,0:RETURN
280 SYMBOL(X(J)+49-LEN(STR$(S)) *12,Y(J)+18),STR$(S),3,3,6,0:RETURN
290 FOR A=P-1 TO P:GOSUB 300:NEXT:RETURN
300 LINE(432,A*8+112)-(639,A*8+119),0,BF:IF S(A)>0 THEN SYMBOL(432,A*8+112),I(A)
+STRING$(13-LEN(I(A))-LEN(STR$(S(A))),32)+STR$(S(A)),2,1,5,0:RETURN ELSE RETURN
310 LINE(458,12)-(620,52),0,BF:RETURN
320 GOSUB 310:SYMBOL(514-LEN(STR$(ST)) *28,12),STR$(ST),7,5,6,0:RETURN
330 LINE(X+432,Y)-(X+447,Y+7),0,BF:RETURN
340 OPEN"R",#1,"R9RECS":FOR A=1 TO 10:FIELD #1,A*12-12 AS DU$,8 AS II(A),4 AS IS
(A):NEXT:RETURN

```

S

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Soft Sector Contributing Editor

Q. *I am running a program that is performing interactive calculations. The results are then stored in a large array and are continually updated. Sometimes the format of the display becomes unruly and, in order to make the display easier to read, I will edit the print statement. The second I edit the program, the contents of the array are set to zero and several days of work are lost. What can I do?*

John Waller
Philadelphia, PA

A. First I must say that the resetting of variables after an edit has been with most dialects of BASIC since I started in the industry. I believe this all started when machines had very little memory and the scalar and array variables were deleted to make room for the editor workspace. Also, it is easier to simply reset variables and force a restart of the BASIC program. With a machine like the 8086 and its handling of memory, preserving variables after an edit should be no big problem.

To take care of your problem, however, I would suggest that you place the data in an array and treat the file as a virtual array. Let's assume that we have an array that is single dimensioned and stores 1,000 single-precision numbers. The following short BASIC program will simulate memory array. Note that the program uses subroutines to simply show the method involved; in-line coding may show a performance increase.

```
10 OPEN "R",1,"VIRTUAL",4: ' OPEN A RANDOM FILE 4 BYTES LONG
20 FIELD 1,NS AS 4: ' DEFINE THE RECORD SIZE OF SINGLE PRECISION
30 GOTO 1000: ' JMP TO THE MAIN PROGRAM
40 'READ THE RECORD AT INDEX AND RETURN X
50 GET 1,INDEX+1: ' ADD ONE TO INDEX, DISK RECORDS START AT 1
60 X=CVI(NS): ' CONVERT THE NUMBER INTO MACHINE FORMAT
70 RETURN: ' X CONTAINS THE VALUE AT INDEX
80 'WRITE THE RECORD AT INDEX WITH VALUE OF X
90 LSET NS=MKI$(X): ' SAVE THE NUMBER IN DISK BUFFER
100 PUT 1,INDEX+1: ' ADD ONE TO INDEX, DISK RECORDS START AT 1
110 RETURN: ' RECORD SAVED
1000 '
1010 ' MAIN PROGRAM
1020 FOR INDEX=0 TO 999
1030 X=INDEX:GOSUB 80: ' WRITE DATA TO VIRTUAL ARRAY
1040 NEXT
1050 SUM=0
1060 FOR INDEX=999 TO 0 STEP -1
1070 GOSUB 40: ' DO A READ OF VIRTUAL ARRAY
```

```
1080 SUM=SUM+X: ' ADD UP FILE
1090 NEXT
1100 PRINT "THE SUM IS ";SUM
1110 CLOSE: ' CLOSE DATA FILE
```

This short segment should give you an idea of how to implement a virtual array. This technique has the advantage of allowing an array as large as the disk space limits. With a little thought, double- or triple-dimension arrays could be implemented.

Q. *When I attempt to load certain programs written for PC-DOS on my 256K, MS-DOS 1.25 Sanyo, I get an error message indicating that the "program is too large to fit in memory." This occurs on programs that run on a 256K IBM. Another software product loads and runs, but the screen will clear in between displays. Is there a way to enable these to work on the Sanyo?*

Paul Penar
Hamden, CT

A. The first problem is a result of trying to read a double-sided disk on a single-sided drive. The program starts to load and then gets confused since it is only reading half the program. Secondly, the reason the screen doesn't clear may be the result of no ANSI control support in the 1.25 DOS. I would suggest that you purchase at least one double-sided drive. If MS-DOS 1.25 is powerful enough and you don't need ANSI control support, you might try DS-DOS Plus for 1.25. If you need the added power of MS-DOS 2.11 and ANSI control support, you might try obtaining a copy of 2.11 available from Sanyo Business Systems.

Q. *After using a CHKDSK /F command there are several FILE?????.CHK files on the disk. Does this have anything to do with rebooting, or turning off the machine in the middle of the program?*

Russell Knapp
Palmdale, CA

A. Most definitely! You should never turn off a computer without exiting the application program completely. Also, you shouldn't turn off the computer with disks in the drives. MS-DOS, for performance reasons, holds the File Allocation Table (FAT) in memory as long as possible. Because of this, you must exit the application program before changing disks or rebooting. The FAT is a table used to manage the allocation of disk units, more commonly called clusters. If the computer is turned off in the middle of the application program, the FAT may or may not be fully updated and can result in lost clusters.

Fortunately the CHKDSK command can correct some of the problems associated with bad FATs. Under DOS 2.11, the CHKDSK command searches the FAT for lost clusters and reconnects them if possible. It then creates files on the disk in the form of FILE????.CHK. Under DOS 1.25, the clusters are just deallocated and the disk space is freed up.

The moral of the story is not to change disks or reboot the system inside of an application program.

Q. I tried to set up a CONFIG.SYS file to increase the number of buffers in an attempt to speed up WordStar. On my MBC-550 using MS-DOS 1.25, I could see no apparent difference. Is there a sure fire way to see if CONFIG.SYS is being loaded?

Margret Perry
Tallahassee, FL

A. First of all, MS-DOS 1.25 doesn't use a CONFIG.SYS file; the options in CONFIG.SYS are only available under 2.11. The one way you could check to see if CONFIG.SYS is loaded under DOS 2.11 is by using CHKDSK and looking at the available memory. Whatever buffers are defined will show about 532 bytes used for each buffer allocated.

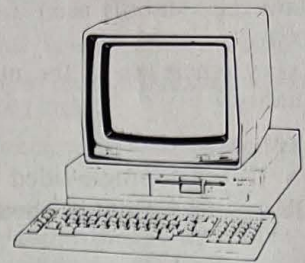
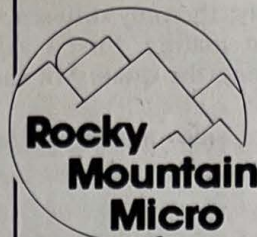
Q. How do I open a file with a record length greater than 256 bytes? It seems that 256 bytes is the default value and I can't seem to find a command switch that allows a larger value when loading BASIC.

Lane McCollum
Scottsboro, AL

A. Under the current version of BASIC I know of no way to increase the record size beyond 256 bytes. This is strange because, in fact, MS-DOS can handle record lengths from one byte to 64K with ease. I suspect that the 256 byte limit stems from the fact that the maximum string length is 255 bytes, and a carry over from eight-bit BASIC's.

Q. When I format an 800K disk, I've noticed that I can get an equal amount of storage on a single-sided, double-density (SS/DD) disk as a double-sided, quad-density (DS/QD) disk. What consequences are there? Will using SS/DD disks in my 800K drives do any harm?

Nathan Fong
Eustis, VA



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A. All disks are the same physically; the only difference is really the quality of the magnetic coating. First I will explain the symbols used in describing the quality of the disks:

xx/yy where xx is the number of sides and yy is the quality.

xx:

SS single-sided
DS double-sided

yy:

SD single-density — a low resolution recording method

DD double-density — a high resolution recording method

QD generally used to define an 80-track, double-density quality

In my experience, a disk with a DS/DD rating will work fine in good 80-track drives. This is the highest quality that I buy for in-house use. As far as hurting your drives with lower quality disks, just make sure that the edges are sealed well. If they are not, removal of the disk can pull the head from it's mounting. Also, if a low quality disk is used, the disk may flake and leave oxide particles on the head, causing poor reading.

Another factor involved in the quality of your disks is the amount of use the disk will incur. The higher the

usage, the better the disk should be. Just remember: One backup is worth a thousand tears!

Q. Is there any way to get the Peach Tree software to run on the Sanyo?

Dayton Bonadie
U.S.A.F., CO

A. It seems to me that the Peach Tree software will run on a Sanyo with a Video RAM board. If any reader has gotten the Peach Tree software to run, please drop me a line here at SOFT SECTOR.

I would like to take this space to personally thank all the readers that have sent in questions. It seems that there are many people who would like to have more than 256K. I would like to hear from users that have ideas on hardware projects (maybe we can get a hardware section started or even an assembly language corner). In closing, many thanks to all Sanyo users.



(Tim Purves is an expert on the Sanyo 550/555 series computers and is an experienced programmer in assembly code, PASCAL, C and BASIC. He is available to answer any questions that the readers of SOFT SECTOR might have. All questions should be addressed to SOFT SECTOR, P.O. Box 385, Prospect, Ky. 40059)

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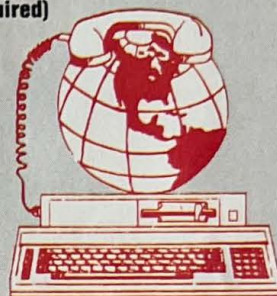
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N
O

Legend tells us of a monastery high up in the Himalayas. In this monastery, Hindu priests have been working on a problem since the beginning of the recorded history of man. In the monastery there are three diamond needles and 64 gold discs. No two discs are the same diameter. Each disc has a hole in its center just large enough to easily slide onto each of the diamond needles. When the priests started their little problem, all the discs were on the first needle in order. That is to say no disc had a larger disc on top of it. Their problem is very simple:

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to move the entire pile of discs to the third diamond needle subject only to two rules:

Rule 1: The pile must be moved one and only one disc at a time. At any given instant every disc must be on one diamond needle, except for one disc which may be in transit from one needle to another.

Rule 2: At no time may a larger disc lie on top of a smaller disc on any of the three diamond needles.

The priests believe when they have accomplished their goal in moving all 64 gold discs to the third diamond needle, the world comes to an end.

I first encountered this problem in freshman calculus class. The problem was called "The Tower of Brahma." Several times in college the same problem recurred in computer science classes with the only notable change being the name, which changed due to certain events of the times. The problem had become known as "The Tower of Hanoi."

The object of the problem in computer science classes was to generate the series of moves needed to solve the problem, which is a subset of the problem. No one had enough computer dollars or patience needed to generate the moves for all 64 discs, even with the mighty 360 Model 65. The math classes were satisfied to merely prove the problem could be solved.

Budding young confidence men at the university built models of the problem, with which the unwary would be readily separated from their cash. The scam worked like this (with minor variations). For a small sum you could try to move 10 discs from the first needle to the third. If the victim could do this in 10 minutes time (no one ever did), there would be a handsome payoff. If the victim failed to accomplish this in the allotted time his fee was forfeit. Well, surely anyone can move one disc a minute!

In the math classes we labeled the needles source, storage and destination arbitrarily (that is, by saying this labeling may be applied to needles one, two and three in any order). The problem could then be demonstrated to be solvable in very short order by the method of induction.

It is evident that we can move one disc from source to destination (pro-

vided a smaller disc is not on destination). Let's say we can move k discs from source to destination. If we can move k discs from source to destination, we can move k discs from source to storage using destination as the new storage. Then we can move the $k+1$ st disc from source to destination. Then by relabeling, we can move the k discs at storage to destination using source as the new storage. This means we can move $k+1$ discs if we can move k discs.

Induction is like knocking down dominoes. If you can knock down any domino and if when domino k (k is arbitrary) is knocked down, domino $k+1$ is also knocked down, then it doesn't matter how many dominoes you set up — all from the first one you knocked over will fall.

To solve the problem on a modern digital computer most simply, we adapt the inductive thinking into a very related concept — programming by recursion. A procedure (a series of steps used to implement some function) is recursive if that procedure invokes itself either directly or indirectly. If that procedure is also an algorithm (that is, the function is completed in some finite amount of time and the procedure terminates), then it is evident this recursion must share a trait of induction. That is, the problem must finally recurse down to a problem that is simply solved (without further recursion). For *The Tower of Hanoi*, the simplest case is moving one disc. As it happens, the trivial solution to *The Tower of Hanoi* is the recursive solution, stated as follows:

Procedure to move k discs from Source to Destination using Stor.

- 1) If k is greater than 1 then move $k-1$ discs from Source to Stor using Destination.
- 2) Move the " k th" disc from Source to Destination.
- 3) If k is greater than 1 then move $k-1$ discs from Stor to Destination using Source.

From an examination of the inductive reasoning of the algorithm (which generates the shortest series of moves), the number of moves needed to move n discs is 2 raised to the n th power minus one. To move all 64 discs only takes 18,446,744,073,709,551,615 moves, which at a microsecond per move would take a little over 584 thousand years.

A priest in the Himalayas can only make about one move per second maximum. If you have been holding your breath with concern over our impending doom, you may now take a deep breath.

In those days graphics work stations were very expensive and not used for such frivolous activities as *The Tower of Hanoi*. We were content to generate move lists. Later, working in the computer industry, I saw programs to generate the piles of discs as characters. These programs would dematerialize the disc on one pile and rematerialize it on another. I found little satisfaction in this. My desire to see the disc fly about on a CRT screen could only be satisfied with the advent of a computer system with graphics that a poor person (such as myself) could purchase. I am proud to say that with the advent of Sanyo's MBC-550 series of personal computers, that day has arrived.

The Sanyo Business Systems MBC-550/555 is an ideal graphics tool for solving this problem. The resolution (640 by 200) is more than sufficient. The 8088 processor (running at 3.7Mhz) is sufficiently fast for reasonable animation. The 128K provided with a minimum system is more than enough space to avoid code crunching (time consuming program size optimization) activities. And the color capability is just pure gravy considering the cost of the system.

My concerns about reasonable animation and a desire to learn something of the internal architecture of the Sanyo led me to solve this problem in the C programming language. This worked out well as C directly supports recursion. In BASIC, I would have to simulate recursion (a reasonably messy activity).

The graphics hardware on the MBC-550/555 organizes its display memory into three color graphics planes. The red and blue planes are at fixed memory addresses. These two planes are in reality four 4416 (4K by 4 bit) dynamic RAM chips. The green plane is taken from the high 16K of user memory (which is the high 16 kilobits of eight 4164 dynamic RAM chips). The red plane has a physical address of F0000 Hex. The blue plane has an address of F4000 Hex. The green graphics plane is a different location for each memory configuration (128K, 192K and 256K), but it is not hard to find. The green

planes location is actually assignable by I/O Port Hex 10.

Each color plane is organized the same way in terms of what bit maps to which pixel (picture element) on the CRT. Each byte of graphics memory is a horizontal line segment, with the most significant bit of the byte on the left and the least significant bit on the right. The bytes themselves are organized in groups of four, each group being four vertically adjacent line segments with the lowest addressed byte on top and the highest addressed byte on the bottom. Eighty of these groups (320 bytes) completely describe four horizontal lines. The next bunch of 80 groups describes the next (lower) four horizontal lines. This is a lot simpler than it sounds, especially if you spend a few seconds examining the diagram labeled Figure 1.

The HD 46505S CRT controller made by Hitachi is used in the Sanyo MBC-550 series computers as part of the graphics circuitry. This particular overglorified piece of sand has a neat feature: The on-chip registers R12 and R13 contain the start address in the display memory. This means that any group of four bytes can be in the upper left-hand corner of the CRT. When the chip reaches the end of the 16K display memory, it simply wraps around in that memory to the beginning. The chip continues on in low memory until the lower right-hand corner has been displayed. The BIOS of the operating system uses this facility to great effect in scrolling the display without moving huge amounts of data (48K) as a block.

There is a catch to this: R12 and R13 are write only (as are most of the registers in this part). This means you can put things into them, but you can't get them back out later. The operating system's BIOS keeps track somewhere of these values; however, 1) I don't want to have to hunt for them, and 2) while I will write a program customized to a particular machine, I try to avoid tying that heavily to the operating system (the program always quits working with the next revision of the DOS).

This scrolling feature makes addressing individual bits a little more complicated than one would like. For this

program it would be nice to have the lowest addressed byte in each color plane be the eight-pixel horizontal line segment in the upper left-hand corner of the CRT. This is not that hard to do. In the "grsetup" routine in lines 64 to 76 in the listing, you can see one way of accomplishing this. This routine first finds where the green plane is. We assume 256K of system RAM, test that hypothesis and work down in 64K decrements till we find it. A C language purist would object strenuously to a variable in uppercase, but to me GREEN is just like RED or BLUE in usage; GREEN is a variable constant.

To make the operating system align video memory, this routine clears the screen by outputting 25 blank lines. Then we output lines with only a zero in the first column until we detect the first byte of the green plane being non-zero (the top line of the ASCII zero is there). This puts the first byte of the green plane very nearly at the left-hand bottom of the screen. A mere 24 more blank lines takes it to the top. Then direct writes to the first and 320th groups in the green plane erases the zero. Not until the program is completed is another new line character output through the normal output facilities. If we did, we would mess up the addressing that was so carefully established.

The graphics memory has been cleared as a result of the setup. Before one can move the discs around on the CRT, they first have to be generated. A three-dimensional projection of a disc onto the two-dimensional screen is possible, but I did not want to make a career of a toy program. Similarly, I could have put holes in the disc and generated the needles. However, I decided the simplest representation of a disc was a rectangle. Due to the representation in the graphics planes, a width of eight pixels for each disc seemed logical. A width of four pixels would be too narrow for good animation.

The routine called "discat" in lines 97 through 103 does the initial generation of each disc in the pile. The choice of width makes it easy to place each eight-by-eight pixel part of each disc.

The animation itself was made simple by restricting the motion of each disc to up, down, left or right. Motion animation of solid objects involves deciding what are the trailing and

leading edges of an object. To move the object, the new leading edge is generated and the old trailing edge erased.

The "moveone" routine does some housekeeping chores to keep track of which disc is where. Then this routine calls the routines "moveup," "moveover" and "movedown" for the disc to be moved.

The selection of shape and width makes upward and downward motion fairly simple. The distance between the leading and trailing edges at any point on the disc is 640 bytes; due to the layout of the object, individual pixels are not a concern. Each new leading edge byte is set to -1 (all bits on) and each trailing edge byte is set to zero. Adjacent bytes in the trailing and leading edges are exactly four bytes apart.

The routine to move discs over is a little more complicated. There are eight bytes on the leading edge and eight bytes on the trailing edge. For each pixel of movement, a bit has to be set in each of the eight leading edge bytes and a bit cleared in each of the eight trailing edge bytes.

Since horizontal motion involves more work than vertical motion, vertical motion has to be slowed down in relation to horizontal motion. Failure to do this would make the animation unbalanced. The delay parameter will provide some measure of control for speed (both horizontal and vertical), with zero being fastest and 200 being very slow.

The function "howhigh" is called to eliminate unnecessary vertical motion. This procedure insures that a disc will clear the highest obstacle to its travel by eight pixels.

If I were to revisit this program in the future there are some enhancements I would like to implement. Among these are accelerated motion. This means for each vertical or horizontal motion the disc would start moving slow. It would speed up until it reached the midpoint, then slow back down until it reached its destination.

Another idea I would like to pursue is to do three "Towers" simultaneously, with each tower on a separate color plane. As the discs passed through each other the composite colors would become visible. This might prove to be a very interesting display. If you experiment with enhancements to



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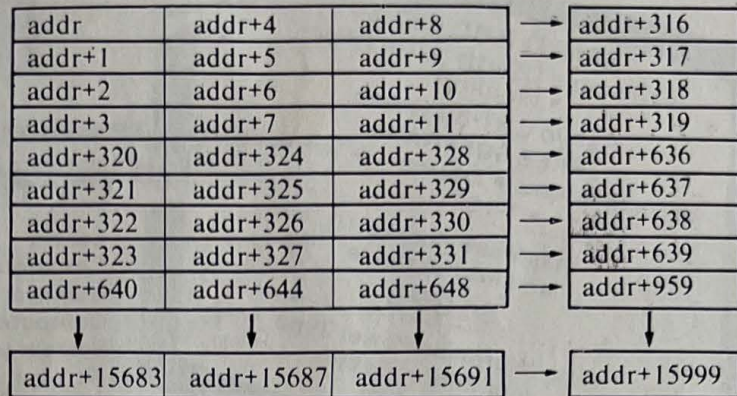
Hanoi, I would enjoy hearing from you.
 If you would like to receive a copy of *The Tower of Hanoi* for the MBC-550/555, please send \$7 to cover reproduction and postage to: Dan Bates, Rt 8 Box 278, Johnson City, TN 37601.

I will send a copy of the source and an executable version of the program.

Bibliography

- The Snobol 4 Programming Language* (2nd Edition), R.E. Griswold, J. F. Poage and I. P. Polonsky, Prentice Hall, Inc., 1971
- Problem-Solving Methods in Artificial Intelligence*, Nils J. Nilsson, McGraw-Hill Book Company, 1971
- Calculus: Part I*, Edwin E. Moise, Addison-Wesley Publishing Company, Inc., 1966
- Parts List Sanyo MBC-550 MBC-555* Sanyo Business Systems Corporation, 1983
- HD 46505R CRT Controller (CRTC) Users Manual HLN014*, Hitachi, 1982

Figure 1:



The listing: HANOI.COM

```

2  /* tower of hanoi also known as the tower of braman */
3  #include <stdio.h>
4  #define HIGREEN 0X4C00
5  int GREEN;
6  #define RED 0XF000
7  #define BLUE 0XF400
8  #define NCOLR 3
9  #define ND 13
10 #define ND1 14
11 int delay, moves, numd, topl, vseg, count, bindex, w2;
12 int stick[ND1], width[ND1], color[ND1], hite[4];
13 int colrflag, doforevr;
14 char ch;
15 int midpoint[4] = {0, 13, 40, 67};
16
17 main()
18 {int i;
19  numd=0;
20  while((numd<1) || (numd>ND)) {
21      printf("HOW MANY DISCS:");
22      scanf("%d",&numd);
23      ch=getchar();
24      putchar('\n');
25  }
26  doforevr=yorn("DO THIS PROBLEM FOREVER (vs once):");
27  ch=getchar();
28  printf("HOW MUCH DELAY:");
29  scanf("%d",&delay);
30  ch=getchar();
31  colrflag=yorn("COLOR MONITOR Yes or No?");
32  ch=getchar();
33  moves=0;

```



```

34 for(i=0; i<ND1; i++) stick[i]=width[i]=0;
35 printf("PRESS <CR> TO CONTINUE");
36 ch=getchar();
37 grsetup();
38 setup();
39 hite[3]=hite[2]=24;
40 hite[1]=24-numd;
41 countdown();
42 while(1) {
43     movepile(numd,1,3,2);
44     if(!doforevr) break;
45     moves=0;
46     movepile(numd,3,2,1);
47     moves=0;
48     movepile(numd,2,1,3);
49     moves=0;}
50 printf("\r\t\tDONE:\t\t");
51 }
52 yorn(st) char *st;
53 {char ch;
54 while(1) {
55     printf(st);
56     ch=toupper(getchar());
57     if(ch=='Y') return -1;
58     if(ch=='N') return 0;
59     putchar('\n');
60 }
61 }
62 }
63
64 grsetup()
65 {int i;
66 GREEN=HIGREEN; i=-1;
67 while(i!=0){
68     GREEN=GREEN-0x10000;
69     pokeb(0, GREEN, 0);
70     i=peek(0, GREEN)&0xff;
71 }
72 for(i=0; i<25; i++)putchar('\n');
73 while(peek(0, GREEN)==0){putchar('0'); putchar('\n');}
74 for(i=0; i<23; i++)putchar('\n');
75 for(i=0; i<4; i++) {pokeb(i, GREEN, 0); pokeb(i+320, GREEN, 0);}
76 }
77
78 setup()
79 {int lev, wid, n, colr[3], colrcnt;
80 colr[0]=GREEN; colr[1]=RED; colr[2]=BLUE;
81 colrcnt=NCOLR;
82 lev=23;
83 wid=ND;
84 n=numd;
85 while(n){
86     stick[n]=1;
87     width[n]=wid;
88     if(colrflag) vseg=colr[--colrcnt];
89     else vseg=GREEN;
90     color[n]=vseg;
91     if(colrcnt==0){
92         colrcnt=NCOLR;}
93     discat(1, lev--, wid--);

```



```

94         n--;}
95     }
96
97     discat(in, row, w) int in, row, w;
98     {int ind, i;
99     ind=row*640 + midpoint[in]*4;
100     for(i=ind-4*w; i<(ind+4*w); i++)
101         {pokeb(i,vseg,0xff);
102         pokeb(i+320,vseg,0xff);}
103     }
105     movepile(howmany,from,to,stor) int howmany, from, to, stor;
106     {
107     if(howmany>1) movepile(howmany-1,from,stor,to);
108     moveone(from,to);
109     if(howmany>1) movepile(howmany-1,stor,to,from);
110     }
111
112     dly(k) int k;
113     {int i;
114     while(k--) {
115         i=delay;
116         while(i--)delay=delay;
117     }
118     }
119
120     int howhigh(beg,end) int beg, end;
121     {int b, e, i, m;
122     b = beg; e = end;
123     if(b>e) {b = end; e = beg;}
124     m=24;
125     for(i=b; i<=e; i++) if(hite[i]<m) m=hite[i];
126     return m;
127     }
128
129     moveone(from, to) int from, to;
130     {int i;
131     printf("\r\t\t\t\t\t%d : (%d>%d)",++moves,from,to);
132     for(i=1; i<ND1; i++) if(stick[i]==from) break;
133     w2=width[i] << 1;
134     bindex = hite[from]*640 + (midpoint[from] << 2) - w2 - w2;
135     vseg=color[i];
136     topl=howhigh(from,to)-2;
137     stick[i]=to;
138     moveup(hite[from]-topl);
139     moveover(midpoint[to]-midpoint[from]);
140     hite[from]++;
141     hite[to]--;
142     movedown(hite[to]-topl);
143     }
145     moveup(c) int c;
146     {int i, j;
147     c *= 8;
148     for(count=0; count<c; count++){
149         bindex -= ((count&3) != 0) ? 1 : 317 ;
150         j = bindex;
151         dly(4);
152         for(i=0; i<w2; i++) {
153             pokeb(j,vseg,0xff);
154             pokeb(j+640,vseg,0);

```



```

155         j += 4;
156     }
157 }
158 }
159
160 movedown(c) int c;
161 {int i, j;
162   c *= 8;
163   for(count=0; count<c; count++){
164       j = bindex;
165       dly(4);
166       for(i=0; i<w2; i++) {
167           pokeb(j,vseg,0);
168           pokeb(j+640,vseg,0xff);
169           j += 4;
170       }
171       bindex += ((count&3) != 3) ? 1 : 317 ;
172   }
173 }
174
175 moveover(c) int c;
176 {int le, te, incr, incr4, abit, bits, i, j, v;
177   te = bindex;   le = bindex + w2*4; incr = 1; abit = 0x8080;
178   if(c<0) {c=-c; te=le-4; le=bindex-4; incr=-1; abit=0x0101;}
179   incr4 = incr * 4;
180   while(c--){
181       i=8;
182       bits=abit;
183       while(i--){
184           dly(1);
185           v=peek(le,vseg)&0xff;
186           v=v|bits;
187           for(j=0; j<4; j++){
188               {pokeb(le+j,vseg,v);
189                 pokeb(le+j+320,vseg,v);}
190           v=peek(te,vseg)&0xff;
191           v=v&(~bits);
192           for(j=0; j<4; j++){
193               {pokeb(te+j,vseg,v);
194                 pokeb(te+j+320,vseg,v);}
195           if(incr>0) bits >>= 1;
196           else      bits <<= 1;
197       }
198       te += incr4; le += incr4; bindex += incr4;
199   }
200 }
201
202 countdown()
203 {int i;
204   i=11;
205   putchar('\r');
206   while(i--){
207       printf("..%d",i);
208       dly(1);
209   }
210 }
211

```


The BASIC Utility That Should Have Been Built In

BASIC

By Geff Purcell

It's 3 a.m. You've been at the keyboard for hours and you've been reworking that program over and over trying to get that all-important routine to work when *burp*, your Sanyo displays yet another error message. You scream and pull out another clump of hair.

As the program grew larger and larger, it became harder and harder to see its structure. Does this sound familiar? Well it does to me. There have been times when I was ready to throw the computer right out the window. Usually those sessions could have been avoided if BASIC only let you see your listings in a more structured form. Like having all your loops and IF/THEN/ELSEs indented to make them easier to read. And how about displaying those multiple statement lines such as this:

```
100 CLS:COLOR 0,2:GOSUB 1000:IF NOT OK THEN  
PRINT"Bad Data":GOTO 200 ELSE PRINT "Current  
file in use:"FNAME$
```

(Geff Purcell has been programming microcomputers since 1978 and is currently a programmer/consultant specializing in business applications. Although he can program in more than 10 languages, he prefers PASCAL, C and BASIC. He may be contacted at 801 Cottonwood Village, Salem, IL 62881; 618-548-5122.)

Like this:

```
100 CLS:
  COLOR 0,2:
  GOSUB 1000:
  IF NOT OK
    THEN PRINT "Bad Data":
      GOTO 200
  ELSE PRINT "Current file in use: "FNAME$
```

If you've ever tried to debug or change someone else's code, then you will be grateful for *Baslist*. It will make any program much easier to read and follow.

Baslist was written while I was writing a computer version of Othello in Sanyo BASIC. I found it getting more and more difficult to debug the tightly packed loops that the computer needed to make its moves quickly. Then I thought it sure would be nice to get a structured listing of this program to help me debug it. So I put Othello on hold and wrote *Baslist* in just two short nights. *Baslist* takes even the ugliest looking code and turns it into beautiful listings. It performs indentation and breaks multiple-statement lines to make the program easier to read.

If you've written code in PASCAL or C, you know you can perform your own indentation as you go without worrying about the space it takes up. But in BASIC, that space is usually too precious to take up (especially on a 128K machine) and it will slow down the interpreter. Now you can write your code in BASIC and pack lines to the maximum without worrying about how you are going to debug it or modify it two years later when you can barely read it now.

Here is a short explanation of the program flow. Lines 1 through 9 contain comments on *Baslist*. Lines 10 through 99 contain what I call housecleaning code, meaning the code that sets up for the program. Lines 100 through 199 contain the main program. And finally, lines 200 through 499 contain the subroutines that will be needed by *Baslist*. The subroutine from Line 200 to Line 300 is the one that performs the actual dissection of the code. Here is an outline of how to use *Baslist*.

- 1) You save your program with the ,A option like this:

```
SAVE "SAMPLE",A
```

This is done so that *Baslist* can then read the program and see the statements in their text form. Normally BASIC compresses the statements into one or two bytes when stored to disk to save space. The ,A option tells it to save the program in ASCII, or full text form.

- 2) Now you would run *Baslist*.

```
RUN "BASLIST"
```

- 3) Now *Baslist* will prompt you for a filename.

Name of file to print [.BAS]:

You can type the name without the extension if the extension is .BAS because it will assign .BAS to it if none is given.

- 4) Next *Baslist* will prompt you for a device or file to print the output to.

Device or filename to route print to:

If you give a filename, all of the output will go to that file. This is handy for using a word processor to add comments anywhere you want to the listing as I have done. If you give a device name, the output will be routed to that device.

The following are valid devices:

PRN	printer	— output goes to printer
AUX	RS-232	— output goes to serial port
NUL	dummy	— output goes nowhere

Devices can be opened just like files and you use PRINT#, WRITE#, INPUT#, GET# and PUT# just as if you were using a normal random or sequential file.

- 5) Next come the listing controls. If you want to use the default values shown in the brackets, press the RETURN key.

What is the MAXimum line length to be [80]:

This may be anything from one to 255 — the default is 80 characters per line. I have found that rarely will a line wrap around. Some functions and some large logic in an IF/THEN statement will sometimes go beyond the 80 characters, but *Baslist* will cut that line and wrap the rest of it around and indent it to keep things nice and neat.

What size Indentation do you want [3]:

This can be whatever you want it to be. I personally prefer an indent of three, although some prefer two, four or five.

What do you want for a LEFT MARGin [7]:

The left margin is where you want the first command on the line to be printed, not where the line number is to be printed. The line number will always be printed between the first and fifth positions and will be right justified instead of left justified.

- 6) Now *Baslist* will start printing the indented form of the program to the screen and to the device or file that you specified. Output will always be echoed to the screen as well as to the device/file. When the program is done, it will print the message: Print Done. This will only print on the screen.

Now for one other thing *Baslist* can do. *Baslist* will do a form feed to a new page if you put a remark line in such as the following:

```
99 'skip
100 INPUT "What is your name: ";PLAYER1$
```


Baslist would then see the remark and send a form feed control to the device/file instead of sending the line. I would suggest only using this when you are going to send copies to a printer. You never know what a word processor would do with a form feed stuck in a file; maybe nothing, but it could be a code for that word processor and cause problems. The remark line must use an apostrophe ('), not a REM, and it must be the first statement on the line. The word SKIP can be in upper- or lowercase, but not mixed case like Skip.

I use the skip function to divide my listing on several pages. I section off the initialization, (housecleaning) section, the main program and the subroutines. Each section will start on a new page.

Modifications you might want to do to the program include adding more functions like SKIP for line numbering and the ability to send control codes to make use of your

printer's special functions. Or you could have the program ask whether or not you want it to perform the SKIP commands it finds.

If you or someone you know owns a BASIC compiler that works on the Sanyo (the IBM *BASCOM* does work; I use it all the time), then I suggest you compile *Baslist*. It greatly increases the speed at which it prints. Under regular Sanyo BASIC it does print a little slowly although I feel the wait is worth it, especially if you are going to use the listing for documentation of a program.

So the next time someone says to you that BASIC is unstructured and a bad language, whip out a listing made with *Baslist* and prove them wrong.

If you have any problems with *Baslist*, want some help with a modification, or have modified it and think I might be interested, please feel free to write or call me.

The listing: BASLIST.BAS

```

1 | =====
2 | Program Name: BASLIST.BAS | Started 11/12/84 | Completed 11/14/84
3 | -----+-----+-----+-----+
4 | Files used by program | Description: | This program will
5 | -----+-----+-----+-----+take a BASIC pro-
6 | #1 *.* | #4 filename.ext | gram saved in the ascii format
7 | #2 *.* | #5 filename.ext | eg. SAVE"TEST",A and indent it.
8 | #3 filename.ext | #6 filename.ext | Output goes to device/file.
9 | =====
10 S$=" ":CLS:MAX=80:LEFTMAR=7:I=3
11 /* MAX = Maximum line length. */
12 /* LEFTMAR = Left margin from edge of paper to first statement. */
13 /* I = Amount to indent when needed. */
20 WIDTH MAX
100 LINE INPUT " Name of file to print [.BAS]:";FILE$:IF INSTR(FILE$,
".")=0 THEN FILE$=FILE$+".bas"
110 OPEN"R",1,FILE$,1:IF LOF(1)=0 THEN PRINT "File not found.":CLOSE:KILL FILE$:
GOTO 100 ELSE CLOSE
120 OPEN"I",1,FILE$
130 LINE INPUT " Device or filename to route print to: ";DEVICE$:OPEN"O",2,DEV
ICE$
140 PRINT "What is the MAXimum line length to be ["MID$(STR$(MAX),2)"]";:LINE IN
PUT MAX$:IF VAL(MAX$)>0 THEN MAX=VAL(MAX$)
150 PRINT " What size Indentation do you want ["MID$(STR$(I),2)"]";:LINE INP
UT I$:IF VAL(I$)>0 THEN I=VAL(I$)
160 PRINT " What do you want for a LEFT MARGin ["MID$(STR$(LEFTMAR),2)"]";:LI
NE INPUT LEFTMAR$:IF VAL(LEFTMAR$)>0 THEN LEFTMAR=VAL(LEFTMAR$)
170 WHILE NOT EOF(1):LINE INPUT#1,A$:GOSUB 200:WEND:CLOSE
180 PRINT "Print Done":END
194 '
195 ' This routine will desect each line passed to it in a$. Line 200
196 ' cuts off the line number and prints it. Also line 200 checks to
197 ' see if the first thing on the line is a 'SKIP or 'skip if it is
198 ' then a form feed is sent to the device/file.
199 '
200 PRT$=RIGHT$(" "+LEFT$(A$,INSTR(A$,S$)-1),5):A$=RIGHT$(A$,LEN(A$)-INSTR(A
$,S$))+":IF MID$(A$,1,5)='skip' OR MID$(A$,1,5)='SKIP' THEN PRINT#2,CHR$(12)
:GOTO 295 ELSE INDENT=LEFTMAR:PRINTED=5:PRINT#2,PRT$;:PRINT PRT$;
210 FOR X=1 TO LEN(A$)
220 IF MID$(A$,X,1)=CHR$(34) THEN X=INSTR(X+1,A$,CHR$(34))+1:IF X=1 THEN P$=A$:G

```



```

OSUB 400:GOTO 295 ELSE 220
230 IF MID$(A$,X,1)=":" THEN P$=LEFT$(A$,X):GOSUB 400:GOTO 300
234 IF MID$(A$,X,1)="'" OR MID$(A$,X,3)="REM" THEN P$=A$:GOSUB 400:GOTO 295
240 IF MID$(A$,X,4)="FOR " THEN LOOPINDENT=LOOPINDENT+I:BACKUP=BACKUP+I:GOTO 290
250 IF MID$(A$,X,5)="NEXT " OR MID$(A$,X,5)="NEXT:" THEN C=0:Y=X+4:WHILE MID$(A$,Y,1)<>":" AND Y<LEN(A$):C=C+ABS(MID$(A$,Y,1)="," ):Y=Y+1:WEND:LOOPINDENT=LOOPINDENT-I*(C+1):GOTO 290
255 IF MID$(A$,X,3)="IF " THEN INDENT=INDENT+I:BACKUP=BACKUP+I:GOTO 290
260 IF MID$(A$,X,6)=" THEN " THEN P$=LEFT$(A$,X-1):GOSUB 400:INDENT=INDENT+5:BACKUP=5:GOTO 300
270 IF MID$(A$,X,6)=" ELSE " THEN P$=LEFT$(A$,X-1):GOSUB 400:BACKUP=5:GOTO 300
272 IF MID$(A$,X,6)="WHILE " THEN LOOPINDENT=LOOPINDENT+I:BACKUP=BACKUP+I:GOTO 290
280 IF MID$(A$,X,5)="WEND:" OR MID$(A$,X,5)="WEND " THEN LOOPINDENT=LOOPINDENT-I
290 NEXT X:P$=A$:GOSUB 400
295 QUOTES=0
299 RETURN
300 A$=RIGHT$(A$,LEN(A$)-X):GOTO 210
395 '
396 ' This routine prints the section sent to it in PRT$. It will check
397 ' to see if PRT$ is longer than MAX. If it is then it cuts up PRT$
398 ' and prints it in sections of MAX length with the correct indent.
399 '
400 ALLTAB=INDENT+LOOPINDENT-BACKUP-PRINTED:BACKUP=0
410 IF LEN(P$)+ALLTAB+PRINTED>MAX THEN PRT$=SPACE$(ALLTAB)+LEFT$(P$,MAX-ALLTAB-PRINTED):PRINT#2,PRT$:PRINT PRT$:P$=RIGHT$(P$,LEN(P$)-(MAX-ALLTAB-PRINTED)):PRINTED=0:GOTO 400
420 PRT$=SPACE$(ALLTAB)+P$:PRINT#2,PRT$:PRINT PRT$:PRINTED=0:RETURN

```



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Contributions to SOFT SECTOR are welcome from everyone. We like to run a variety of programs which will be useful/helpful/fun for other Sanyo owners.

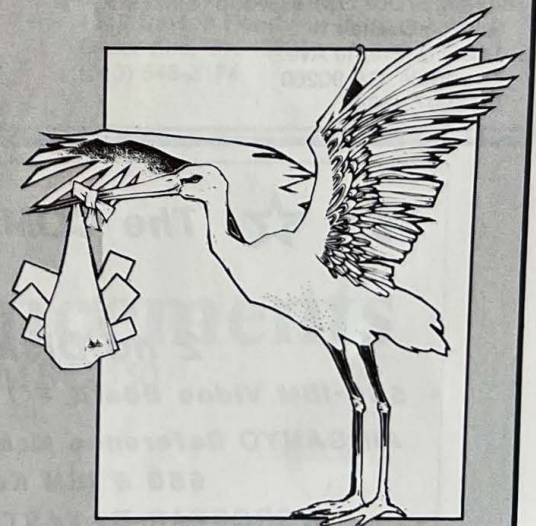
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• **WHAT TO WRITE:** Anything with a practical application. If it interests you, it will probably interest a lot of others. However, we vastly prefer articles with accompanying programs which can be entered and run. The more unique the idea, the more appeal. We can prepare finished tables, diagrams and schematics from your rough draft if you provide legible copy and full directions. We have a continuing need for short articles with short listings.

We do pay for submissions, based on a number of criteria. Those wishing remuneration should *so state* when making submissions.

For the benefit of those who wish more detailed information on making submissions, please send an SASE to: Submissions Editor, SOFT SECTOR, P.O. Box 385, Prospect, KY 40059. We will send you some more comprehensive guidelines.

Please do not submit programs or articles currently submitted to another publication.



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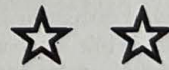
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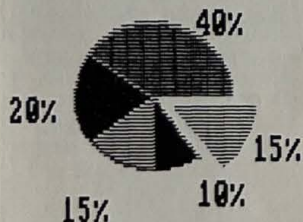
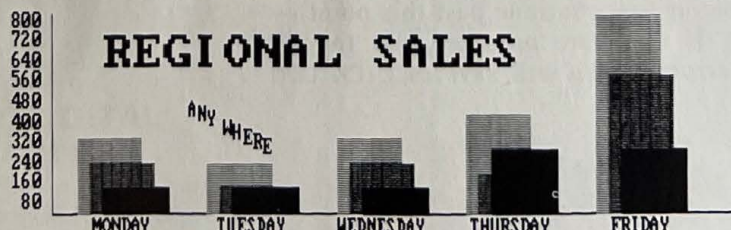
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Turning Off The Key Click

By Ira Domsky

When I read the February issue of *SOFT SECTOR*, I was overjoyed to find ways to control the noisemaker in my MBC-555. I, like most people, found the blat that the machine made extremely obnoxious as well as loud. My dog found it even more disturbing; she would not stay in the house while I had the computer on. Alas, I found peace by unplugging the speaker.

I was not satisfied with this solution, especially when I read about the "click" routine in the November issue ("The Sounding Board," Page 66). The word processing terminals at my place of work have this option, and being a sloppy touch-typist, I find it helpful.

Now for the real reason I am writing this letter. I find the click helpful in word processing, but not necessarily so for other uses of my Sanyo. Wanting to find a way of turning off the click without rebooting, I developed a 25-byte routine that "unclicks" the system. This program allows me to turn the click on and off at will. I entered the program using *DEBUG*, but the enterprising novice BASIC programmer can use the *CLICK.BAS* program as a shell to have BASIC write their own *UNCLICK.COM* file.

An *UNCLICK.COM* file can be created by placing a disk with *DEBUG* in the default drive and typing:

DEBUG ENTER	<i>execute DEBUG</i>
N UNCLICK.COM ENTER	<i>name output file</i>
R CX ENTER	<i>change the CX register</i>
CX 0000	<i>the machine will respond</i>
:0019 ENTER	<i>you respond with length of file in bytes</i>

```
E 100 1E FC 33 C0 50 8E C0 06 FA 1F B9 04 00 BE 07 01 ENTER
E 110 BF EC 03 56 F3 A4 FB 1F C3 ENTER
```

Now, check that all of the correct data has been entered using the "unassemble" command in *DEBUG*:

XXXX:0100 1E	PUSH	DS	<i>'save for return to DOS</i>
XXXX:0101 FC	CLD		<i>'set move direction up</i>
XXXX:0102 33C0	XOR	AX,AX	<i>'set AX to 00</i>
XXXX:0104 50	PUSH	AX	<i>'save AX</i>
XXXX:0105 8EC0	MOV	ES,AX	<i>'set E.SEG to 00</i>
XXXX:0107 06	PUSH	ES	<i>'save ES</i>
XXXX:0108 FA	CLI		<i>'disable interrupts</i>
XXXX:0109 1F	POP	DS	<i>'set D.SEG to 00</i>
XXXX:010A B90400	MOV	CX,0004	<i>'move four byte jump address</i>
XXXX:010D BE0701	MOV	SI,0107	<i>' from click patch</i>
XXXX:0110 BEFC03	MOV	DI,03EC	<i>' back to its original</i>
XXXX:0113 56	PUSH	SI	<i>' address</i>
XXXX:0114 F3	REPZ		
XXXX:0115 A4	MOVSB		
XXXX:0116 FB	STI		<i>'enable interrupts</i>
XXXX:0117 1F	POP	DS	<i>'recover return segment</i>
XXXX:0118 C3	RET		<i>'return to DOS</i>

This unassemble listing will continue past this point — do not be alarmed. If there are mistakes, use the 'E' command to correct errors. If all is well, save *UNCLICK.COM* and exit *DEBUG*:

W ENTER	<i>write the file</i>
Q ENTER	<i>exit DEBUG</i>



REVIEWS



Hardware review

The Greywolf Super System — A Truly Excellent Upgrade

Sometimes it seems as though there's never enough space on a diskette for all the files you want to put on it. Since the maximum size of a file is usually limited by the space available on a disk, it can be difficult to work with huge database files.

When the IBM PC came out in 1981, its floppy disks could store a maximum of 160K each. The Sanyo MBC-550/555 had the same capability when it first came out — but by that time IBM had switched to double-sided drives and PC-DOS 2, and was getting 360K on a disk. The later Sanyo 550-2/555-2 machines did this using MS-DOS 2.11, which is now pretty much the standard for MS-DOS compatible machines. But even at that, you can only get 360K on a disk, and if you have big files (or are just plain cheap, like me), this may not be enough.

Hard disk drives are one option, but they are expensive and on the 550/555 you can't install the Video RAM Board on a machine that has the hard disk interface board (although we hear there is a Y-connector available now). Another option is to go to even higher densities on floppy disks.

The Tandy 2000 uses 80-track drives to get 720K per diskette; IBM's Personal Computer AT gets 1.2 megabytes on special diskettes and the Kaypro Robie reportedly puts 2.1 megabytes on a 5¼ inch diskette. There have been several attempts to make the Sanyo into a high-density system by installing 80-track TEAC FD-55B drives and modifying MS-DOS. These patches have been successful, except that with 80-track drives installed, the Sanyo can no longer use certain copy-protected programs that boot directly without using MS-DOS and can't use the Video RAM Board's special version of MS-DOS 2.11.

Greywolf's Super System package has broken through that barrier. The Super System not only gives you 800K per disk (1.6 megabytes total on-line storage) but lets you

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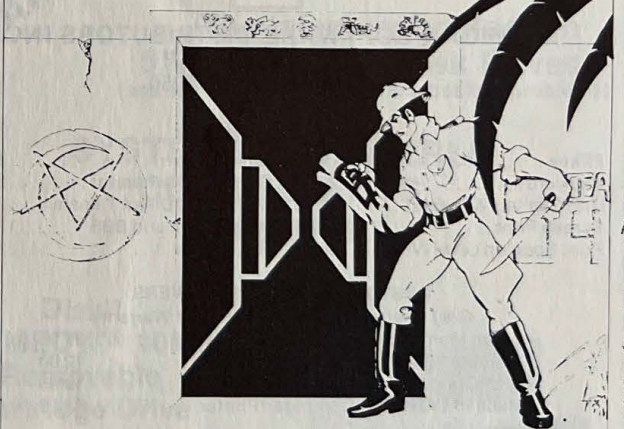
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read, write and format disks for a number of other systems. And your machine can, with a flip of a switch, do anything a normal Sanyo 555-2 can do, including using the Video RAM Board in the usual 360K per disk configuration. (Greywolf says that they are working on a Video RAM Board version.)

The Super System is sold either as a complete system installed in a Sanyo 550 (which includes the MicroPro *WordStar/CalcStar* package that comes with a single-drive 550) or as a kit including two drives, two versions of the Super System DOS and a special module that lets you switch back to 40-track operation.

Installing the kit is no big deal; the drives are installed in place of the old drive(s) in the same way that the Sanyo manual specifies, except that the switch module connects between the drive cable and the main board. Another connector goes to the joystick socket, and the switch is on a special plate that mounts in the square "joystick" hole on the back. To install the DOS patches, you flip the switch up, turn on the machine and boot the Version 1 master disk; it then asks you to put your MS-DOS 1.25 master in drive B and copies DOS over from it. (The Version 2 system disk already has MS-DOS 2.11 on it.)

If you want to get the kit, it's best to install it in a one-drive, single-sided Sanyo 550; if you already have two drives (or double-sided drives) they will go to waste.

The Super System originally used MS-DOS 1.25. This is the version I'll talk about most, because Version 2 (MS-DOS 2.11) acts just like the usual 2.11 and handles both Super System disks and regular Sanyo and IBM disk

formats automatically. Version 1 does require some thought on the part of the user as to which format a given disk is in, but it pays off by letting you use the Corona, Tandy 2000 and DEC Rainbow 100 disk formats.

Super System Version 1 uses the drive letters to identify different disk formats. Logical drives A: and B: are set up for the Super System format; higher letters identify other formats on "drive B," which is actually physical drive 1. There's a program called *ID* that identifies the format that a diskette is in (Version 1 doesn't do that automatically), a new *Format* program to format disks in any Version 1 format, and a program called *GWINSTAL* that lets you redefine the drive letters to suit your needs. Version 2 differs from normal MS-DOS 2.11 only in that its *Format* program can use either the Super System or normal IBM/Sanyo formats.

Actually, that's all there is to it. There's no wizardry here like windows or pull-down menus. The Super System doesn't turn your Sanyo into a machine that will beat the IBM PC AT for half the price. It's just a really good way to expand the disk storage of your Sanyo 550 without losing any capabilities. I can honestly recommend it to almost any Sanyo 550 user.

(Greywolf Technologies, 18 Dog Lane, Storrs, CT 06268, 203-928-6555, upgrade kit \$599, complete system \$1,399)

— Ed Ellers

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However, these templates are not integrated with each other which makes it a little bit cumbersome to enter information that already has been entered on other forms.

Each tax form template follows a step-by-step procedure by line number for each IRS form. I found the tax templates can aid you in a number of ways.

- 1) They allow your Sanyo to quickly and accurately perform mathematical calculations.
- 2) They allow you to play "what if" calculations with a variety of tax alternatives to minimize your tax liability.
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When I was given this assignment, I thought it would be appropriate to test the program with my actual 1984

tax data, since I was given the 1984 tax templates. The first thing I did was to look at the documentation manual. The manual includes an overview of *TaxTemp*, a template outline of each form, operating and utility functions and a disclaimer by the manufacturer.

To operate the *TaxTemp* templates, you first boot your system and load *CalcStar* in Drive A. Once inside *CalcStar*, press PF1 for the command prompt and then type 'L' to load your desired template. After the template appears on the screen, press PF1 again for the command prompt and this time type 'A' for automatic cursor movement for data entry. After the last figure is entered, the template automatically recalculates itself. You can then save your data for that template by pressing PF1 and typing 'S' and your file name.

One thing I was disappointed with was no option to print the tax information on the standard IRS forms. It would be nice to have the information print directly on the tax forms since all the data is already in the files. I believe you will find these templates to be a valuable tool in your tax return preparation. It should be noted that next year's templates and additional forms will become available from the manufacturer for a small fee. I TH, Inc. also offers a 30-day, money-back guarantee.

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— John Kandra

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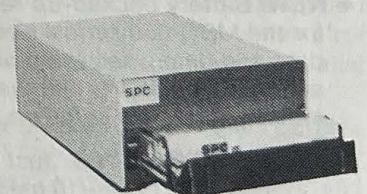
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Player Piano — Peck and Poke Fun on the Sanyo

Player Piano is a program which allows you to edit, load, record and save music on your Sanyo MBC-550/555 series computer. I wish to state at the outset that I have no background in music that would qualify me to make any profound commentary on the quality of the music you can play. Nevertheless, I was impressed with the sound that I could produce by experimenting with keys, volumes, tempos, octaves and time values.

The program features a nice graphic representation of a little keyboard to remind you of the active keys (the top two rows of your keyboard), as well as a menu for such features as playback, recording, editing, loading, saving, plus special editing features. For the musically disadvantaged such as myself, the program contains over a dozen nice prerecorded ditties such as "Happy Birthday," "Dixie," "The Pink Panther," "The Entertainer," "Give My Regards to Broadway" and others. To play them, all I

had to do was load the software and then follow the menu, which in this case informed me that I could load a roll of music by pressing the PF5 key. The computer prompts for the program name and allows you to press "?" for a directory, which I generally needed to get the file names of the rolls, at least at the beginning.

You can also create your own music. Although I didn't find this in the documentation explicitly, Dr. Lewis of Key Software, who was very helpful, advised me that I could change the volume by touching either the left or right (curly) brace — left to lower, right to raise. Experimentation then showed that I could modify the tempo by use of the "<" and ">" keys. In retrospect, I note that these symbols are used right on the screen, but these might not be obvious, and I have suggested that these be made a bit more explicit.

Another item that needs to be made more explicit for novice computer users is the way to load the software. As an experienced user, I could tell that the way to do it was to load my own DOS, then use the *Player Piano* diskette and type PIANO from DOS Ready (at the A> prompt). While this is not a serious consideration, a rank beginner might be unclear as to how to proceed.

Speaking of the software itself, the disk is copy-protected. While I am not fond of copy-protected software personally, I have to concede that this is exactly the kind of software that is most subject to piracy. Key Software, however, has programmed *Player Piano*, a fast machine language program, to allow you to make a backup disk for use in a second drive (if you have one). However, you must keep the original diskette in the other drive. This should at least save some wear and tear on the disk. In addition, Key Software will offer replacement disks for a nominal fee (a couple of dollars) if any becomes defective, upon return of the original.

I could say much more about this product, such as commenting about the attractive binder and manual which accompany the data disk. Instead, I will just say that despite the oversights I mentioned in the documentation and the copy-protection, this is an excellent program about which I have no hesitation in recommending. It is reasonably priced and will work on any minimally-equipped Sanyo or IBM system. Even if you're a musical ignoramus like me, you're bound to enjoy *Player Piano*. And, if you have kids (as I do), they will pester you to let them play. But you won't mind because it will give you an excuse to play too.

Editor's Note: Key Software advises that *Player Piano's* copy-protection may not allow it to function on the Sanyo Greywolf systems. Owners of this system should contact Key Software before purchasing.

(Key Software Products, 440 Ninth Avenue, Menlo Park, CA 94025, 415-364-9847, Version II, \$34.95)

— Dr. Michael W. Ecker



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Why be tied to some proprietary, uncommon protocol?

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Cornerman — Happiness Is Always Just Around The Corner

As a professional programmer, I get a lot of puzzled looks when I begin punching numbers on my little calculator while working with a "sophisticated" computer. "Can't the computer multiply two little numbers?" they inquire. "Not while it's running DEBUG," I explain, giving them little satisfaction. Well I don't have that problem any more. A score of programs have become available to let you interrupt what you're doing on the computer to do a little calculating, jot down some notes, and a number of other tasks that the computer is usually too busy for. When you're finished, the computer can go back to what it was doing just as if it had never stopped.

MichTron's *Cornerman* is such a program. It waits patiently in memory for you to call upon its resources. Providing an ASCII table, calculator, calendar, notepad, and telephone dialer, *Cornerman* is available whenever you need it. By pressing CTRL-TAB, you bring *Cornerman* to life. A menu "folds" in from the corner of the display giving you access to any of its five functions.

Having an ASCII table convenient may not mean much to some folks, but to programmers and anyone taking advantage of the Sanyo's special graphics characters, it's a great reference tool. You can "page" through the table until you find the character you're looking for. It's value is displayed in both decimal and hexadecimal.

Cornerman's calculator is probably the reason most folks will buy this package. Not only does it duplicate the functions of a normal hand-held calculator, it also has Hex/octal/decimal conversion and one's complement built-in for programming types. The result of your calculations can easily be exported to the program that you're using at the time.

The calculator works with the numeric keypad and combinations of function keys with SHIFT and CTRL. The legends on the calculator "window" can be a bit confusing at first, but the calculator can be mastered after just a few uses. I could never figure out what all the buttons on a scientific calculator were for anyway, so it only figures that the *Cornerman* calculator should look a little confusing to me.

Before *Cornerman*, there never seemed to be a calendar around when I needed one. That's no longer a problem. *Cornerman* automatically displays the current month and allows you to see a calendar for any month through 2099. That's far enough into the future for me.

Cornerman's notepad allows you to "write" a few lines of notes and store up to 99 note pages. It automatically stamps each note with the current date and time (although the 550/555 does not keep very accurate time). You can easily scroll back through the notes in date order.

If you have a Hayes Smartmodem or compatible, you can take advantage of *Cornerman*'s "automatic Rolodex." It allows you to store names and telephone numbers and later recall and dial these numbers automatically through the modem. It even works with long distance numbers and can dial the access codes for long distance services.

Cornerman's documentation is quite short, but using the program is pretty much self-explanatory. Like most people, I use documentation only as a last resort. I only had to refer to it while using the calculator function. Later, I read it more thoroughly to better acquaint myself with the program and learn of some of its intricacies.

Having used Borland International's *Sidekick* for some time on IBM compatible computers such as the MBC-775, I am spoiled with some of its features that are missing from *Cornerman*. A *Sidekick*-like text editor and appointment scheduler would be welcome additions to *Cornerman*. You have to remember, though, that unlike *Sidekick*, *Cornerman* works on the Sanyo 550/555 without the expense of an add-on board or the hassle of using a keyboard patch. And at \$39.95 it costs less than half that of the unprotected version of *Sidekick*.

All in all, *Cornerman* is a program that no Sanyo user should be without. Once you've met the little man in the corner of the screen, you'll wonder how you got anything done without him.

(MichTron, 576 S. Telegraph, Pontiac, MI 48053, 313-334-5700, \$39.95)

— Danny Humphress

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Grammatik — The Next Step After Checking Spelling

In 1919, Cornell student E.B. White studied English under William Strunk, Jr. Professor Strunk then used his book, *The Elements Of Style*, as a textbook. Later, White updated and revised the work, the most recent being the 1979 third edition published by Macmillan.

The book, which is half the size of *Reader's Digest*, is packed with examples of good and bad usage of punctuation and style. It can be easily located in a professional writers library as the most dogeared volume.

Concise writing is powerful. *Grammatik* proposes to check a document against the 500 phrase dictionary for poor style, the 100 word sexist dictionary for gender-specific words, and lastly, profile word usage by listing each word with the number of times it has been used. All a help toward concise writing.

Punctuation is checked for quotations and parentheses. It expects letters in a word to be either all upper- or all lowercase (it flags words like *CalcStar*). Also, it makes sure that all I's are capitalized, that each sentence begins with a capital, and it flags occurrences of double word usage, such as "Paris in the the spring."

Grammatik consumes less than 70K of disk space and has no problems with *WordStar* documents. The program

assumes that all words are spelled correctly, as the dictionaries only contain correct spellings.

The documentation is primitive by modern standards, typewritten and single-side xeroxed on three hole punched, letter size paper.

I struggled for several hours to get the program to work. The program could easily have had AUTOEXEC and configuration files on the disk to make first-time use a snap.

The program is simple to use and works as advertised, but the screens and reports lack the slickness and polish of more modern programs. For example, there is no way to exit the program from the main screen without re-booting. An exit path is provided only after document analysis and reporting are provided.

I used *Grammatik* on several magazine articles I had on disk. The only errors it located were mixed capitalization (*WordStar*) and the use of 'very' (a vague adverb). I'm not sure if this is a good grade for me or a bad grade for the software.

My suggestion is to pick up a \$3.25 copy of *The Elements Of Style*, by Strunk and White, at your local bookstore. It needs no documentation, requires no disk space, can be exited easily and needs only a bookmark to re-boot. If, after spending 45 minutes to read the book, you feel that an electronic proofreader — that uses some of the same rules with added punctuation checking — could help, *Grammatik* may be for you.

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Fabs/86M And AutoSort/86M — Does A B-Tree Bear Fruit?

Are you tired of all the games on your machine and would like to get into some serious programming? How about writing a database manager to keep track of your household goods inventory, or maybe an accounting system for your small business? If you're at the point where writing programs of this type appeal to you, then you may be interested in *Fabs/86M* and *AutoSort/86M*.

Fabs/86M and *AutoSort/86M* are two assembly language utilities written for the Sanyo MBC-550/555 which give a user rapid access to fixed length records in a file.

Fabs can create a key file which can provide you with the number of any record in the file in just one second or so when called with the key field value. *Fabs* derives its name from the "Fast Access B-Tree" structure of the key file which it builds to keep track of the exact location of the records within a file.

AutoSort, on the other hand provides you with information from records which meet selection criteria which you specify when you call the program. *AutoSort*, as its name implies, will provide you with these items sorted

by any field(s) you specify. *AutoSort* is also usable as a stand alone utility. It should be noted that both of these utilities are, in fact, used by Computer Control Systems in their *DB-Fabs* database program which was reviewed by G.L. Swearingen in the November issue of *SOFT SECTOR*.

Both *Fabs* and *AutoSort* come on disks which contain an executable .COM file as well as an assembled .OBJ file. With both types of files available, you can pull the power of either of these utilities into your interpreted Sanyo BASIC programs as well as your compiled Microsoft Compiler BASIC, Microsoft FORTRAN, Microsoft PASCAL and Lattice C programs. The disks also contain AUTOEXEC.BAT files which can be used to load the .COM file into high memory and provide you with a calling address for use in your Sanyo BASIC program using a CALL statement.

In order to call either utility from any language, you must specify a command string and then execute a call. The command string controls which of the available options will be executed when you make the call. Both of the programs include an attractive manual which I rate high on clarity. The manuals provide instructions on how to interface these utilities with each of the above mentioned languages and the disks include test programs which demonstrate their use.

In *Fabs*, the key file utility options available to the user include key file functions (build, open, close, insert, replace and delete, as well as getting the number of primary keys or the maximum key length) and search instructions (search for first key, generic key, last key, next key, next after key, previous key or previous before key). *Fabs* allows keys to be ASCII or integer and the number of keys allowable varies with the length of the key field. Multiple keys are allowed and duplicate keys are permitted.

In *AutoSort*, the user's options include several types of sort/selects or a merge of two different files. The three types of sort/selects are full record selects, where the entire record is contained in the output file; a key and pointer select, where only the data record pointers and their corresponding sort keys are contained in the output file; and a pointer only select, where only the data record pointers are contained in the output file. Also included is the capability to retain or delete records which meet the select criteria specified. Up to 10 sort fields are permitted as well as up to four selection criteria. The select criteria can be "ANDed" or "ORed" together as you desire.

Perhaps an example will help to explain where these utilities might be useful. Let's say you had a mail list file which contained the names, addresses, phone numbers and social security numbers of hundreds of individuals. You want to be able to retrieve records from the file rapidly by specifying the last name of the individual. If you didn't care much about speed, you could search through the entire file looking for a last name which matched the one you were interested in, but you would search, on the average, half of the file to find any name in particular (which would be 50 for a file of 100 records).

Another approach to the problem would be to keep the file in sorted order by last name and then use a binary sort technique to retrieve the record. Using this technique, you would look at 4.6 entries, on the average — a great improvement in the number of records you need to search (binary searches are logarithmic and the natural log of 100 is 4.6). This however is not as attractive as it first appears. In order to do this you need to maintain the file

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in sorted order. In a worst case this means you would have to read through the file searching for a last name which was alphabetically greater than the one you wished to insert and then insert your new record just prior to the one you just found. Deleting records involves more of the same complications with the result being that you spend a great deal of time reading and writing large portions of the file in order to maintain your file in a sorted order.

Now enter the key file. A key file contains the contents of the key field (here the last name) for each of the records, as well as a pointer (the record number) to the location of the record in the file. In order to find the record for Jones, you need only go to the key file and search for Jones and find his record number next to it. You could then go directly to Jones' record in your data file without looking through the entire data file to find it. But, you say, "Am I not back to where I started? I'm looking through another unsorted file to find a match so that I can get the number of the record I need to work with? Isn't there a better way?" Yes, there is. We could sort the key file and get yet another significant increase in speed, but let's consider a new idea. If the key file is structured differently, in a nonlinear fashion, we might be able to get there faster. Finally, we get to the concept of a B-tree structure!

The B-tree structure in which the key files in *Fabs* are kept allows you to get to the key you seek by traversing a minimum number of nodes. Nodes are the points in a tree where two branches meet. In this case, the relationship between the key field we seek, Jones, and the value at each successive node determines which branch of the B-tree we will move into in order to find our record.

Sorry for the long technical explanation, but it took that much text to get to the point where it made sense to introduce the B-tree concept. Here we've developed a highly efficient scheme for access to a very large data file using a key file which features a B-tree structure for super fast record retrieval. The B-tree structure is an optimal one for large data files and the record retrieval time is nearly independent of file size. There are, of course, other techniques such as hashing which might also have been used, but the B-tree concept is certainly a viable one for the type of sparse sets we are working with here.

The groundwork to be laid in explaining the function of *AutoSort* is a lot simpler. If you wanted to retrieve the names of all of the people on your mailing list who lived in California, for instance, you could call *AutoSort* on your data file telling it to retain the records for all of the persons with addresses in California. Since you get a better rate for carrier route pre-sort, you would also specify that the listing should be sorted by ZIP code. Of course if you had a key file with states in it you could get your list of record numbers even faster. Such a key file could, of course, be built with *Fabs*. Now you see how these two utilities could potentially be used in conjunction to do some very powerful things with your mailing list.

Neither of these utilities is intended for the novice, but both offer great power to someone who is interested in investing the time in learning how to use them. I ran both of them using Sanyo BASIC on a fixed length record data file which I had created elsewhere and, although it took me a couple of hours to understand their function and master the command syntax, the investment was worth it. When I ran *Fabs*, retrieval by key was very fast, as was an included sort/select of the file, using *AutoSort*. I plan to use both of these utilities in an upcoming database application.

All in all, both *AutoSort* and *Fabs* are well-written utilities which perform as promised and are well worth their price. They are, respectively, a fast and powerful sort/select utility and a fast key file access utility which can easily be integrated into any kind of program. They're not for everyone, but if these are what you need, then I highly recommend them.

(Computer Control Systems, Inc., 298 21st Terrace S.E., Largo, FL 33541, 813-586-1886, *Fabs/86M* \$150, *AutoSort/86M* \$150, plus \$4 S/H)

— Bill Chang

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N-Code — Better Than A Captain Midnight Code Ring

N-Code is a program to provide protection for confidential information. The program encodes data files on diskettes by scrambling them using both a unique password provided with *N-Code* and a user key that the user types in — known only to him. This provides several interesting combinations of security. If, for example, you had a secret recipe for vanilla floppy disk cookies, this list could be encoded so that only those employees that had access to *both* the *N-Code* disk, its password and the user key used to encrypt the file, could unscramble it.

If you also had files on the disk for your secret suppliers, they could be protected by a different user key, thus giving access to the supplier files to those knowing its user key. The purchasing agent, for example.

If you went to a cookie convention with your encoded file and *N-Code* disk, and a competitor stole your disk case, they would be foiled! They would need both the user key and the *N-Code* password or else try to hit it by trial and error. For this they would need lots of luck, as there are over 60 million possibilities.

An employee could also leave with a copy of the data disk — it is copyable so backup is no problem — and the user key. Foiled again! You must have the *N-Code* disk and its password.

I am a confirmed disbeliever in passwords. It has always seemed that any time I have password protected a file, through some quirk of fate I was the one who was "protected" from getting my data.

Dr. Baker's law states that, "The probability of being unable to resurrect a password protected file is equal to the square of the amount of data being protected."

Should you employ *N-Code*, Baker's law should be considered. *Always* keep two unencrypted copies of your data in two safe secret places. Keep the copies in two places in case one of them burns down, and make two copies in case you have a power failure during the back up of your backup copy.

N-Code worked flawlessly for me. In every case I was able to decode my files without a hitch. The documentation is good and an on-disk tutorial is provided to lead you by the hand through the program.

N-Code is available in versions for both DOS 1.25 and DOS 2.11. A word of warning: Both versions are supplied on double-sided, 360K disks, so you will need a double-sided drive configuration on your Sanyo.

(A-OK Computers, 816 Easley Street, Suite 615, Silver Spring, MD 20910, 301-588-8446, \$79; produced by K + L Software)

— Stephen W. Baker, Ph.D.

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Sanyo Communications Pack — Reach Out And Autodial Someone

Communications software — let's face it — is not the most exciting software on the market: no headlines, no fancy graphics, no monsters chomping other monsters, no impressive editing capabilities. Just call up the program, give it a phone number, and tie yourself into another computer where the action is. The software just isn't as glamorous as the spreadsheets, the word processors, and the zap 'em games. When they don't work, they are blackballed. If acceptable, perhaps a mention or two. And if really successful, they are still second-class to programs such as "Preppy-Stomper" or "Battle of the Cheeseburgers."

What makes a terminal package good, anyway? A program that is both functional and easy-to-understand, even if it lacks a few features, is better than one which is more complex but harder to learn. Many of the communications packages available today were created by professional programmers long used to the world of XON/XOFF, data bits, and Hayes protocol. These programs tend to be powerful but intimidating to the new communicator. What the beginning user needs is a program he can learn on, simple enough to operate, yet powerful enough to adapt to his needs. Such a program should include:

- a wide range of terminal configuration options.
- the ability to buffer incoming data.
- the ability to print the contents of that buffer, if needed.
- the ability to print incoming data directly (often, but not always possible, depending on your printer and Baud rate).
- transferring of files to and from your computer.
- Hayes compatibility (generally accepted as the industry standard).

John Birchfield, an independent programmer, has developed the *Sanyo Communications Pack* (or *SCP*), a genuinely well-written and thought-out entry against competitors like *Copylink* and *Intellicom*. The packaging is not fancy, just a disk and eight full pages of information, but the results are promising and worth your interest. *SCP*

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contains all the features above and is used through the function keys.

SCP tells you what is happening by overlaying a command menu on the incoming text. When you want to get rid of a menu, just press RETURN and the original screen is left intact. This overlay method differs from other communication products, such as *Copylink* from U.S. Digital. *Copylink* prints its menus by scrolling them under the existing screen, causing the loss of several lines every time you want a menu. Overlaying does look strange if there are characters around the overlay area, but you will get used to it. A status line is always at the top of the screen with buffer and printer information.

SCP's function key layout is as follows:

PF1 — Buffer Maintenance
PF2 — Buffer On/Off
PF3 — Printer On/Off
PF5 — HELP (shows function key list)
PF6 — Terminal Configuration
PF7 — Autodial Menu
PF8 — File Transfer
PF9 — MS-DOS Commands
PF10 — Exit *SCP*

Since *SCP* comes already configured for the Sanyo MBC-550 series, you only need to select the Baud rate and the phone type. This makes setting up very easy, since no great knowledge of terminal parameters is necessary. If you need to change them, however, you have control over Baud rate (110 to 9600), parity, stop and data bits, XON/XOFF, duplex, line feed generation, ASCII value for the DELETE key, and pulse or tone dialing.

I logged onto several local bulletin boards at 300 Baud with great ease. The autodial routine is a little hard to get used to; the function displays only one number at a time, but you can use substrings to search for listings. A separate overlay menu of all the numbers stored would have been more helpful — perhaps a feature for the next version.

As with other terminal programs, you may encounter noise problems with the serial port. Shielding the cable inside the machine and moving it away from the power wires to the motherboard and disk drive may eliminate part of the problem. Also recommended is grounding Pin 7 of the serial port to the chassis. If you feel uneasy about performing these adjustments, your Sanyo dealer will fix it for you for a nominal charge.

There are also versions of this program for the IBM PC and compatibles such as Corona, Leading Edge, etc. If you are worried about buying software from such a small operation, be aware that Mr. Birchfield is equipped to turn out 100 copies a week. For technical support, catch him after 6 p.m. PST.

(John Birchfield, 411 Crane Avenue, Turlock, CA 95380,
209-634-6243, \$50)

— George M. Smart



Recipe File — Computing In The Kitchen

How many times have you cut out a recipe and saved it and then when you wanted to cook a very special dinner, you could not find the recipe you cut out? This is a common problem that almost everyone has. Up to now there was no way to put your recipes on your computer, unless you used *InfoStar*. However, *InfoStar* is not the easiest thing to use, especially if all you want to do is hold your recipes. Now there is a solution to this perplexing problem.

Michigan Software has a new program for the Sanyo called *Recipe File*. This will not teach you how to cook, nor will it tell if what you cook is good or bad. What this program does is keep track of your recipes and make it a lot easier to find them.

When the program is loaded, the whole screen is filled with a full-color picture of the different food categories. To the right of the picture is a list of the twenty categories; for example, Fruits, Breads, Beverages, etc.

It is easy to add a recipe to the file. First you select the category you want by using the arrow keys. When the category is selected, you are asked whether you wish to

(A)dd or (L)ist. The computer will ask for the name of the recipe and this can be anything you wish. Next, you enter the ingredients and you are asked how to prepare the recipe. If there are any mistakes in your typing, you can edit the file before you SAVE it, but make sure there are no mistakes. Once the file is saved, I have found no way to correct a recipe short of making another one.

You don't have to take your computer to the kitchen every time you want to cook. *Recipe File* will print any recipe you want. This makes it much easier when you have three or four things you want to cook at the same time.

The only thing I found wrong with this program is that it does not let you erase a file. However, this is explained in the instructions which say, "who throws out recipes?" This is a small flaw if it is a flaw at all.

(Michigan Software, 43345 Grand River, Novi, MI 48059, 313-348-4477, \$39.95 plus \$3 S/H, requires 256K and two drives)

— Pat Brestel

REVIEWS

REVIEWS

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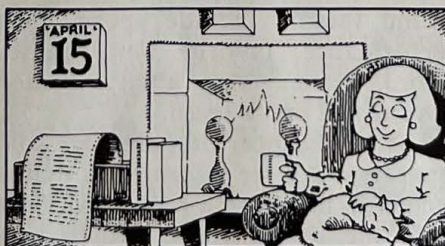
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April 1985 SOFT SECTOR 81

SOFT TALK

OPEN SESAME. *Unlockit* is a machine language utility for the removal of the protection status of a program saved under Sanyo BASIC using the 'Q' option. Once unlocked, you may list, edit or modify the program.

Unlockit is currently available for \$29.95 from Level IV Products, Inc., 28194 Schoolcraft Road, Livonia, MI 48150; (313) 525-6200.

* * *

FANCY FONT is a program designed to work with any text editor or word processing package that produces an ASCII file as output. This program consists of a collection of programs and character sets tailored very closely to particular types of dot matrix printers in order to produce the best quality possible from these printers.

There are two versions of *Fancy Font* based upon the supported printers. The 'FX' version produces high quality printing at a resolution of 51,840 dots/square inch on Epson FX and RX printers. The 'MX' version produces high quality output at a resolution of 25,920 dots/square inch on all Epson printers and several other printers.

Other than the printer type, the requirements are the same for the versions. **Operating System:** MS-DOS or PC-DOS, 1.25, 2.11 (for 16-bit machines); CP/M, 2.2 (for 8-bit machines). **Memory:** 128K for MS-DOS or PC-

DOS systems; 64K for CP/M 2.2 systems. **Disk Storage:** 128K minimum, more recommended.

Fancy Font is currently available for \$180 from SoftCraft, Inc., 222 State Street, Madison, WI 52703; (608) 257-3300.

* * *

THEY'RE OFF! Now a program that allows you to improve your performance at the track is available for the Sanyo. *The Handicapper* is designed to handicap thoroughbred racing, harness racing and dog racing.

Thoroughbred factors include speed, class, past performance, post position, jockey record, beaten favorite and weight. Harness factors include speed, class, past performance, post position, driver record, breaking tendencies, beaten favorite and parking out. Greyhound factors include speed, past performance, favorite box, trainer record, maneuvering ability, beaten favorite and break speed.

The handicapper programs are sold separately. All the information that is needed to handicap a race is available from the racing form, the harness program or the dog track program. Data entry is fast and simple. This program does not guarantee a winner every time, but it does promise improved results from wagers.

Each handicapper program sells for \$49.95. Two are available for \$74.95 and all three retail for \$99.95. For further information or to order, contact

Federal Hill Software, 825 William St., Baltimore, MD 21230; (301) 685-6254.

* * *

DEAR WORD is a word processing program written in C and assembly languages. This program comes with a variety of features including screen-oriented editing, use of windows, global search and replace, word wrap, horizontal scrolling and much more.

This is the first product released by Honeybit Software. It is written for machines running MS-DOS 2.11 with 128K or more memory. It comes with a 25-page user's manual which is on the disk. *Dear Word* is currently available for \$15 from Honeybit Software, 5430 S.W. Helen Avenue, Corvallis, OR 97333; (503) 754-9124.

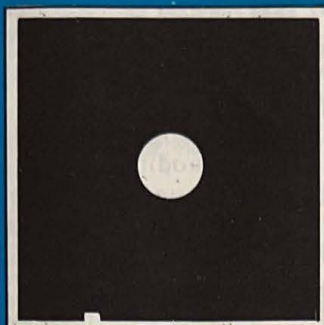
* * *

A SANYO TEXT DUMP which can print a picture image of the text on your display screen from any mode that you are in, is now available from Level IV Products, Inc.

When loaded, this utility installs and protects itself in lower memory. The screen dump is activated by pressing CONTROL-0, and may be stopped at any point by pressing ESCAPE.

The *Sanyo Text Dump Utility* is currently available for \$19.95 from Level IV Products, Inc., 28194 Schoolcraft Road, Livonia, MI 48150; (313) 525-6200.

* * *



BASICALLY EASY. "15 Minute BASIC" from Micro Logic Corporation is a two-sided, two-color, 8 1/2" plastic card which uses simple language and illustrations to help teach BASIC programming. It is designed for new owners of personal computers who want to write their own programs, BASIC instructors who want to recommend a preparatory text and managers who want to understand computers.

The card assumes no programming knowledge and covers the fundamental statement types, variables, formulas, strings, arrays, functions, a variety of realistic programs and more. A companion card, "Algorithms", includes slightly more advanced BASIC programs.

"15 Minute BASIC" and "Algorithms" are currently available for \$5.95 each plus \$1 S/H, from Micro Logic Corp., P.O. Box 174, 100 2nd Street, Hackensack, NJ 07602; (201) 342-6518.

A SANYO HOST AND BULLETIN BOARD which is now available from Michigan Software, is designed to allow you to access your Sanyo MBC-550/555 computer from a remote terminal over standard telephone lines with the use of a RS232 Board and a modem. It is also possible to use the *Host* and a terminal hook up without a modem by using a null modem adapter.

There are 16 different calls that can be made from BASIC to the *Host* to

make it do a variety of things. Some are needed to make the *Host* work and others are enhancements that allow you to perform a function that would take a few BASIC program lines or would be rather slow in doing them. There are also other things that can be added to the *Bulletin Board* to make it do more functions, depending upon what you want your board to do.

The *Sanyo Host and Bulletin Board* is currently available for \$179.95 plus \$3 S/H, from Michigan Software, 43345 Grand River, Novi, MI 48050; (313) 348-4477.

QUERY! 2 is a general database program which is designed to keep records about classes of objects by linking the various properties of the objects together. The total of all the information about one object is referred to as a record and each property that you record about a portion of a database that can be easily manipulated is the field.

Query! 2 can Sort, Search, Replace, Change and Print the various fields in your database. *Query! 2* consists of eight self-prompting programs which are; *Create, Add, View, Recover, Purge, Sort Printer and Search.*

Query! 2 is currently available for \$29.95 from Hoyle & Hoyle Software, 604 S. Elam Avenue, Greensboro, NC 27403; (919) 378-1050.

soft sector



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Back copies of many issues of **SOFT SECTOR** are still available.

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DOUBLE DUTY. Sigma Research Associates has recently released *EZWTOTXT* and *Options*. Both of these programs are designed for the Sanyo MBC-550/555 series computers but also operate on most other IBM compatible machines which run under MS-DOS 2.11 with an ANSI driver installed.

EZWTOTXT is a utility for converting *EasyWriter I* files to plain ASCII text for print spooling or use with other word processors.

Options is a program for analyzing stock and commodity options. It can identify over and under priced options, implied security volatility, hedge ratios for spreads and generate statistics of interest to the option investor.

EZWTOTXT is currently available for \$14.95 plus \$1.75 S/H. *Options* is currently available for \$49.95 plus \$1.75 S/H. Both may be obtained from Sigma Research Associates, 5666 La Jolla Boulevard, Suite 107, La Jolla, CA 92037; (619) 459-2743.

DON'T GET KEYED UP from trying to learn to use *WordStar*, get *Keys Please!* from Precision Software Products and make *WordStar* work for you.

Keys Please! gives instant access to all of *WordStar*'s capabilities; adds editing and print formatting commands; organizes commands by word processing function and provides a simplified, non-technical *WordStar* installation.

This program helps reduce the time and difficulty that it takes to learn *WordStar*. The commands are easier to

learn and its on-screen command summary eliminates the need to memorize.

Keys Please! is currently available for \$69.95 from Precision Software Products, 360-17th Street, Suite 204, Oakland, CA 94612; (415) 839-5780.

QUICKCITE is a bibliography and general card sorter designed for students, writers and researchers who find business programs slow, complicated and expensive. You may use your favorite editor to set up lists of variable length records and then merge, sort, extract or reformat these records. Files are sorted in RAM and file size is limited only by the size of system memory.

The bibliography format follows that of *The Chicago Manual of Style*. Punctuation control codes and command words used by most editor programs may be ignored in sorting. Entries may be numbered or renumbered. Metacharacters allow foreign language characters to have special meaning and duplicate author names may be replaced by, or restored from, dashes. Features are definable through menus and a timer is provided to keep track of performance.

Quickcite is currently available for \$22.50 from Chaucer Software, P.O. Box 2308, Princeton, NJ 08540.



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- Customer Activity Report
- Open Item Balance Forward
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- Allows sales of non-inventory services

General Ledger

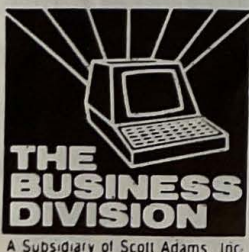
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Patches And More Patches For WordStar

For those of you who use *WordStar* and are driven nearly to distraction by the "garbage" that appears on the screen when the NUM LOCK and GRAPH keys are struck, I discovered a devilishly simple patch to WS.COM using DEBUG that solves the problem.

Place a DOS disk containing DEBUG.COM in Drive A and a disk containing WS.COM in Drive B (or both files on one disk for single-drive users). Now type:

```
DEBUG B:WS.COM  ENTER  load WS.COM into memory
E 724 00          ENTER  enter 00 at address 724
W                ENTER  write WS.COM back to disk
Q                ENTER  exit DEBUG
```

Ira Domskey
Tempe, AZ

* * *

Most of my correspondence is done using the 12 CPI (characters per inch) mode. I wondered if there was a way to change the default of *WordStar* to accomplish this. There is, indeed, a very easy way.

Place your system disk in Drive A and a copy of WS.COM in Drive B. Now type DEBUG B:WS.COM and hit the RETURN key. At the '-' prompt, enter E 037C and hit RETURN. You should see the following on the screen.

```
A> DEBUG B:WS.COM
-E 037C
00CF:037C 0C_
```

Now type 0A and hit RETURN. This changes the default of *WordStar* to 12 CPI. To change the Alternate Pitch (^PA) to 10 CPI, type E 037D and RETURN. You should see the following:

```
-E 037D
00CF:037D 0A_
```

Now type W and RETURN, then Q and RETURN to get out of DEBUG. Now you should have a *WordStar* that defaults to 12 CPI.

Gordon F. Myers
Dayton, OH

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CORRECTIONS

CORRECTIONS

CORRECTIONS

Due to a printing error, a single program line in the listing of MUSIC.BAS was illegible. On Page 23 (March '85), Line 2090 should read:

```
2090 PITCH=VAL(I$):IF PITCH>0 AND PITCH<MAX+1  
THEN 2110 ELSE RETURN
```

Readers who may have questions or would like more information about the memory upgrade article, "The 768K Solution" (March '85, Page 36), may contact the author, John Domingues, at 3550 Londonderry Ln. S.W., Roanoke, VA 24018; (703) 774-1484. Doing business as Thumper Productions, Mr. Domingues has an ad on Page 8 of the current issue.

Because of a bug in BASIC Versions 1.1 and 1.2 regarding using the "spade" graphics character, CHR\$(6), with the SYMBOL command, alternate characters were used for the playing cards in the *Five Card Draw* program, POKER.BAS (March '84, Page 60). If you are using one of these versions of Sanyo BASIC, you should leave the program as is. However, if your version of BASIC is 1.25 or later, you can make the following changes to get the proper characters:

- 1) In program Line 2420, change the three occurrences of CHR\$(15) to CHR\$(5).
- 2) In program Line 2450, change the three occurrences of CHR\$(5) to CHR\$(6).

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Logic took a holiday when the Sanyo's drive indicator lights were configured to remain on after being selected. For single-sided TEAC users, here's a solution.

TEAC FD-54A LED Modification

By John R. Kelty

I originally bought the Sanyo MBC-555 computer before the "dash 2" double-sided drive versions became available. My machine came with two TEAC model FD-54A single-sided disk drives installed. The various user's manuals described how the drives were to be used, but there were a couple of problems. At first I didn't like having Drive A on the right-hand side, I was so used to systems having it on the left. This problem is easily corrected by changing the drive select plug on the disk drive, but the front is permanently labeled A and B, so this was not very appealing. I now have my Sanyo mounted vertically on the side of one of my computer tables so that Drive A is on top. That seemed appropriate.

The other problem was with the drive lights. I destroyed data on more than one disk by pulling the diskette out while the drive was still writing (particularly while using *WordStar*). This was carelessness, but again, I was so used to having the disk drive bezel light on only when the motor was running and the drive selected that I could not seem to get used to the Sanyo light scheme. The Sanyo method was to have the drive light show you which drive

was the latest accessed — not very useful in my opinion. A few months ago I noticed in *Byte* magazine (October 1984, Page 34) a description for changing the lights-on capabilities of the TEAC drive, so there are others out there who did not enjoy this configuration either.

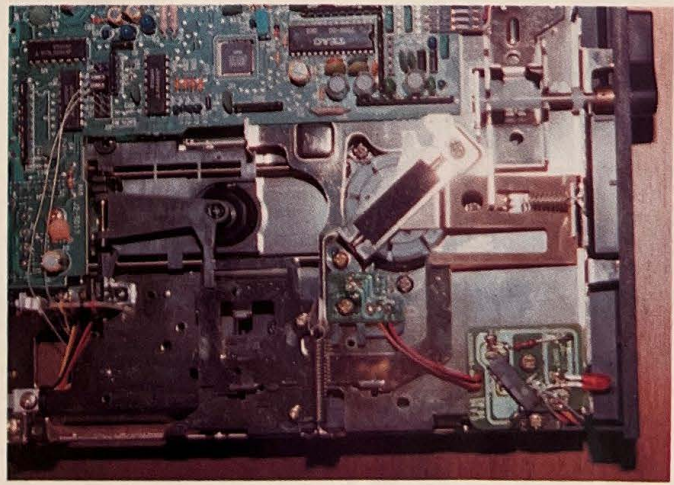
The way I "fixed" my drives does not require any trace cutting, is completely removable and nearly undetectable in case you ever decide to upgrade to double-sided drives and sell the original units unmodified.

To get the LED (light-emitting diode) on the front to come on during reading or writing and while the diskette is turning, you simply need to look at the HM and DS lines. DS is the drive select line and HM is the line that causes the drive read/write head to load when the

motor on signal is sent to the drive. For Drive A the DS0 line is used, and for Drive B the DS1 line is used.

Unfortunately, the TEAC FD-54A drives do not provide a method of selecting the LED to light for the presence of these signals. With a little checking, I found that if I attached these two signals to the inputs of an NOR gate that the output would go low if either of these signals went logic high (5 Volts). If both were logic low (0 Volts), then the NOR gate output would be high. This is just what I needed.

TEAC built a small circuit board up near the front of the 54A drive to hold the "in-use" LED and route wires, and for the other LEDs and sensors used in the drive for disk write protection and rotation detection. You must



The left side view of a modified TEAC FD-54A disk drive. The metal shield has been removed. Route two wires as shown from the connector at the top left to pins 2 and 3 of the 7402 IC at the bottom right.

(John Kelty holds a master's degree in electrical engineering and is currently the electronics supervisor for the University of Nebraska Department of Physics. His hobbies include computer speech synthesis. He may be contacted at 1440 N. 61st, Lincoln, NE 68505.)

remove a metal cover to get to this board. The board has ground, +5 Volts, the in-use LED (LED201), a resistor (R201), and is held on with one Phillips-head screw. Remove the board and unsolder the resistor and the LED.

Now review the schematic diagram and pictures to see what pins will be used on the 7402 chip and cut off the other pins so that they will be out of the way when you solder the chip to the small LED board. You need to keep pins 1, 2, 3, 7 and 14. Bend pins 1, 2 and 3 of the IC (integrated circuit) straight out and bend the anode lead of the LED straight out. This is the lead that was not previously connected to the resistor R201 trace. This lead gets soldered to Pin 1 of the IC. Then lay the right corner bent LED lead back into the circuit board where it had been and resolder it. Line up pins 14 and 7 of the IC so that they are over the +5 Volt and ground traces as shown in the photos.

Solder IC Pin 14 to the +5 Volt trace first. Then get a 150 Ohm, quarter-watt resistor (higher Ohm values will make the LED dimmer, larger wattages may not fit easily) and bend either of the leads to fit into the R201 pad that connects to the trace feeding the LED. Solder this in place and attach the other end to the ground trace along with Pin 7 of the IC. Depending on your soldering talents and the way you bend the leads, there are numerous ways to achieve this. Again, please reference the pictures to view one possible way of wiring these to the board. It is important to be neat and use very little solder if you ever want to remove these parts unnoticeably and restore your drive to its original condition. Now screw the board back into place and check for clearance from the drive covers.

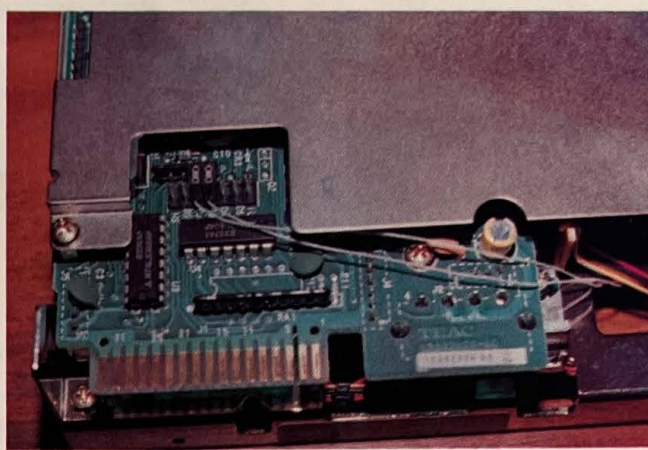
Next you must wire two pieces of wire-wrap type wire (or any other very small diameter insulated wire) to pins 2 and 3 of the IC. Feed these wires through the disk drive casing (avoiding any areas with moving parts) back to the other side where the configuration strapping plugs are found. If you use wire-wrap wire and have the tool used for wrapping, you can wrap a few turns onto the IC pins before soldering to help hold them in place. Wrap the other ends (it does not matter which wire is which) to the DS line of your choice (i.e., DS1 for Drive B) and the HM line and then place the strapping plug over the pins as it was before you added the wrapped wire. Replace any of the covers that

were removed and place the drives back into the computer as described in the *Operator's Guide*.

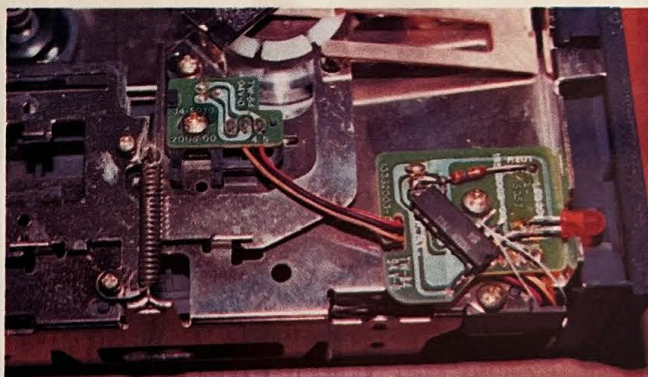
Test the LEDs by turning on the computer and placing a disk in Drive A to boot a system. When the diskette quits rotating, the light should go off. If you do a directory (DIR), the light should go back on again and back off when the drive is finished. If you have two disk drives, test the other drive

using DIR B: or a similar action for Drive B.

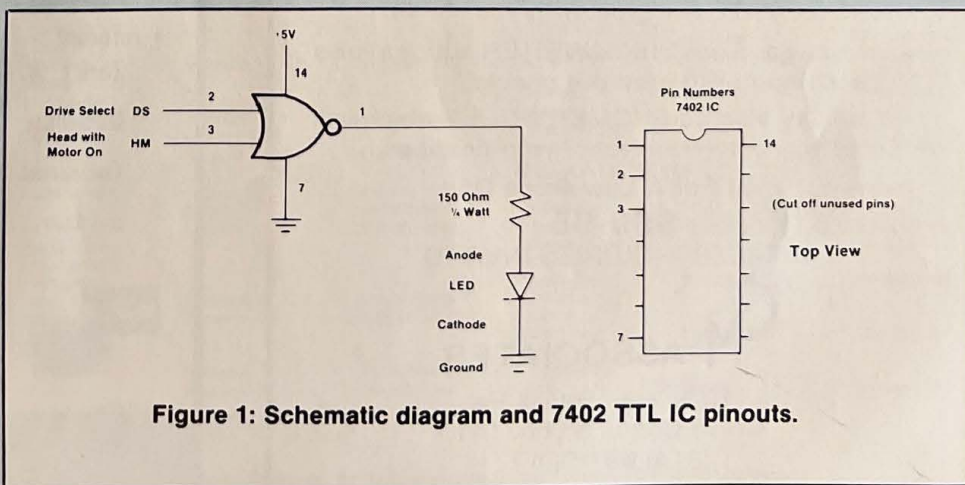
Now your indicator lights are more like the norm and you are less likely to bother the drives while they are working on a diskette. If you have FD-55 series drives, you do not need to perform this modification since there are sufficient jumper configurations (six!) for the selection of when you want the front bezel indicator to turn on.



Connections to the HM and DS lines. The HM line is on the right. For Drive A use the DS0 line. For Drive B use the DS1 line.



The new 7402 IC and 150 ohm resistor mounted on the existing LED circuit board. Note that all of the pins on the 7402 have been removed except for pins 1, 2, 3, 7 and 14.



Continued from Page 19

code. It's then up to you to install the code via DEBUG; no detailed instructions will be included.

2) Or, send \$5 and I'll return a disk containing a copy of my Prairie Physics WSSPDI freeware program. Run this program and the new, corrected patch will be installed automatically into your WS.COM file. The whole process takes only a few seconds and has the advantage of being goof-proof.

Since the latter option (the disk) is essentially an open half-price special for one of my commercial programs, I'm invoking a time limit on it: the disk offer will be honored only through the cover month of this magazine. After that, the price will return to \$10. [Prairie Physics, P.O. Box 2369, 67201.]

Richard Kruse
Wichita, KS

Editor's Note: WizStar, which appeared last month in SOFT SECTOR (March '85, Page 8), also installs this patch, among others.

RAM BOARD UPDATE

Editor:

In their article on the "Lotus Board" in the December SOFT SECTOR, the authors quote Arthur Shebar as saying that all of the pfs software for the IBM PC functions

properly. So far, I can run pfs: File and pfs: Report, but neither pfs: Write or Plan will load properly for me. If they know something that I do not, I hope that they will share it with me.

Volkswriter Deluxe runs without problems. I am using it with this letter. Lotus, of course, runs beautifully.

Edwin P. Marks
Fargo, ND

Editor's Note: According to the folks in the computer division at Sanyo, all of the later versions of the pfs series will run with the Video RAM Board. Apparently there are some problems with the very early versions, just as there are some reported problems with the very early version of Lotus 1-2-3. If you are experiencing problems, it may be necessary to get updated copies of the programs in question.

ESPRIT DE CORPS

Editor:

I am interested in starting a club for Sanyo 550/555 users. The club would be for Delaware — currently there is none. [1320 Quincy Drive, Green Acres, 19803.]

Fred C. Borjes
Wilmington, DE

Editor:

I am new to computing and I am very pleased with my MBC-555-2. The question is, which will get to me first, frustration or achievement.

A short cut to the front door of success would be to actively promote users groups. May I suggest that on your "Clubs" page, you allow people like myself to invite other Sanyo users interested in forming a new group to be made aware of each other's presence. Frustration should lead to resolve, not abandonment. [249 Arch St., 16201.]

Dr. Gene Gould
Kittanning, PA

Editor:

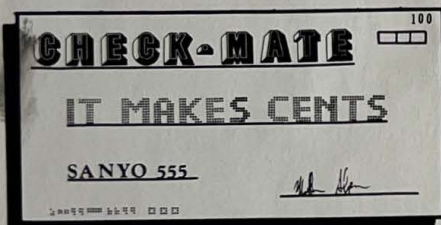
We would like to announce the formation of the Mississippi Gulf Coast Sanyo Users Group. We plan to meet monthly for the purpose of communicating ideas and suggestions involving the use of the Sanyo MBC-550 series computers. Other MS-DOS compatible computer users are also welcome. All interested users should contact me at (601) 863-6359. [103 McGuire Drive, 39560.]

Gary Secunda
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Editor:

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For information please contact your local dealer or Sanyo Business Systems, 50 Beth Neilson Drive, Toronto, Ontario, Canada, Tel: (416)421-8344, TLX: 065-24383

Another approach is the use of The Source and CompuServe. The latter already has a Sanyo PC section under the IBM PC.

We would like to see an BBS pioneer like Sanyo's Mark Zeiger accept this challenging opportunity. What better, more cost-effective advertising, promotion and information exchange could Sanyo help set up for the mere cost of a dedicated phone line and a hard disk system?

Bob Tercero, Victor Frank
Hal Joseph, Cal Lindell
Sanyo PC Hackers
Los Altos, CA



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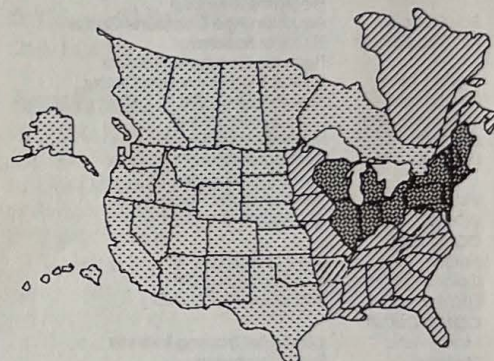
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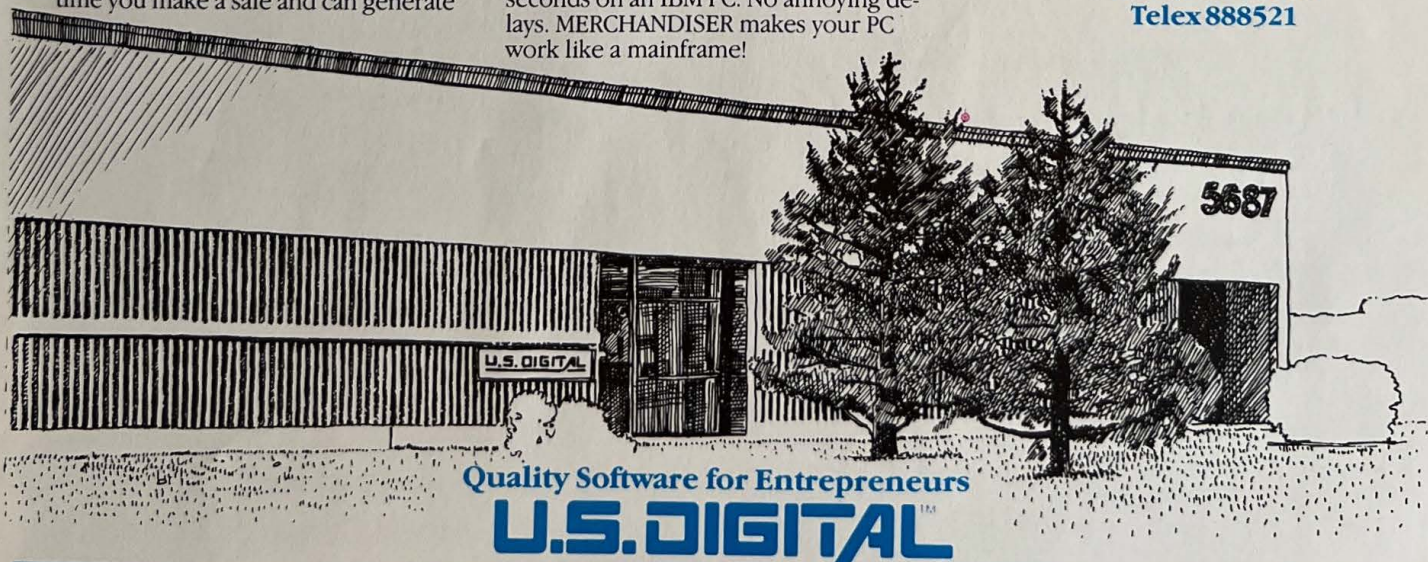
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